

# STARTLING STORIES

The **FIVE GOLD BANDS**

A Novel of the Spaceways

By **JACK VANCE**

A THRILLING  
PUBLICATION

**ARDON MY IRON NERVES**

Captain Future Novels by **EDMOND HAMILTON**



# A tale of two Texans



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Vol. 22, No. 3      A THRILLING PUBLICATION      November, 1950



## THE FUTURE OF CONSUMER POLICY

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*Paddy MacMillan and the girl from the Earth Agency risk death on five alien worlds in the most fantastic of all galactic treasure hunts!*

### Two Completed Narratives

PAID BY THE MEMBER	Edmond Hamilton	75
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If you think Long is an invulnerable robot, just read his own account of getting unshackled and running to Black's Fourth Mass!

**TOUGH OLD MAN**.....L. Ron Hubbard 115

Young Mages had to serve under the most formidable  
 wizard—and on the narrowest frontier of  
 the universe!

**Abstract**

LOVE MY ROBOT.....Ron Phillips 97

Proving both the uniqueness and the existence of demand's solution

ROAD BLOCK.....Robert Moore Williams 105

As conditions worsen, tensions that simmer in society—and in Congress—

**TAIL TALK**.....Melick Reynolds 130

First procedure takes from the record of Halse back to Jim Bidart's time

## References

THE ETHER VINATES.....The Editor 6

It also provides the authors, including non-academics, and teachers

THE CHANNEL TUNNEL.....Willy Ley 135

The neurological project of a traffic tube from England to France

CURRENT FAN PUBLICATIONS.....A Brief 156

SCIENCE FICTION BOOKSHELF ..... &amp; Department 152

[illegible]

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This man is a veteran of the United States Army. He served in the Pacific during World War II. He is now a radio technician. He is now a radio technician. He is now a radio technician.



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I check all boxes. Approved for mailing under 10-10-10



**A**FTER studying with interest early critical reactions to the Pal-Heintz-Bonetti motion picture, *Destination Moon*, it seems to us that in these reactions lie clear indications of the proportions and scope of the problem that lies immediately ahead for science fiction. This problem is the winning of understanding and acceptance by the hothousers of wide popular interest, those critics and commentators who can bring the hitherto apathetic portion of the public at least to consideration of science fiction.

We caught a preview of the picture in question a week or so before its release and thought it a very fine job indeed. The "plot" was the trip itself, the photography as superb as it had, save in a very few brief sequences, the ambience of reality. Save for a necessary and somewhat hoked-up ending *Destination Moon* to us had the impact of a documentary film—blessedly relieved of the generally objectionable commentator present in too many such productions.

On the whole, however, the New York critics were puzzled by the picture—save for that hoked-up finale, in which conventional picture elements to which they were accustomed evidenced themselves. One of them even considered the entire movie a "comedy"—which would in itself be laughable if it did not indicate such a sad misunderstanding of what the picture was all about.

In short, science fiction to them had all the clarity of a manuscript scrawled for a would-be reader whose formal education ended with the eighth grade.

### The Martian Chronicles

Somewhat the same difficulties emerged when Ray Bradbury's first novel, *The Martian Chronicles*, was published last spring. Here was a brilliant, "different" and utterly unobscuring type of book, authored by a

writer whose short stories have won him an enviable series of literary prizes in the past four years.

Yet the volume received virtually no critical attention at all. Because it came out under a science-fiction imprimaturo it was relegated to the few inches of space given to "specimens and adventure" by such major critical publications as gave it any notice at all.

Frankly this made us a little bit ill.

There are, of course, a number of major literary critics who have shown and are showing both interest and sympathy for the burgeoning science fiction field. Clifton Fadiman, during his New Yorker years, repeatedly lent the drums for *et al.*—but, alas, during that time few science fiction novels were being published. And he has devoted himself almost entirely to playing radio and television master of ceremonies during the last decade.

Orville Prescott of the New York Times is a devotee, albeit in general one of such high literary standards that few of the current crop of space-agers repeat meet with his approval. And Edmund Wilson, Fadiman's New Yorker successor, has evinced a somewhat skeptical readiness to be convinced of the importance of *et al.* His studies of H. P. Lovecraft are proof of it.

But in general literary and dramatic critics—those of real influence in any rate—seem to be somewhere out beyond left field in respect to science fiction. And the fields of radio and television, who are *et al.*'s vociferous mees at present, are only beginning to develop any criticism of importance.

### A Mystic Cult?

Actually, it appears to us, these ladies and gentlemen are terrified of the name science fiction itself. To them it spells some mystic cult wherein all human values are discarded, wherein Buck Rogers and Brick Bradford and the like covert slide by slide

with problems of science in fiction form expressed in such highly technical terms that understanding is impossible for a non-K.I.T. man.

This complex must generally be regarded as absurd, for reasons we intend immediately to list. But it is there and it promises to be tough to crush. And it is a barrier that must be crushed if science fiction is to play its very real and important role in the present scene of popular thought and imaginative entertainment.

In the first place, science fiction is no novel form of expression. In the movies it goes back, to our knowledge, to *The Cabinet of Doctor Caligari*, which was made in Germany back in 1918—or not long after birth of a Nation brought the hitherto scorned cinematic medium into the sunlight of cultural appreciation.

Since then we have had Fritz Lang's *Metropolis*, the British-produced fantasies and science-fantasies, *The Steps of Things to Come*, *The Man Who Could Work Miracles* (both based on H. G. Wells novels), *Straway to Heaven*, and many others from abroad.

And Hollywood has produced its share, including Conan Doyle's *The Lost World*, the comical-scientific *Just Imagine*, *Frankenstein*, *King Kong*, *It Happened Tomorrow*, *Dr. Cyclops* and scores of others, including, also, the Flash Gordon serials, *Mighty Joe Young* and the recent *Robotship X-M*.

To ourselves at any rate, it seems only logical that the film critics should be at least semi-adjusted to such a movie as *Destination Moon*. But apparently they are not. Haven't known the values of the routine "scientific" movie are at least as fantastic as anything that has yet appeared in it.

## Classic Science Fiction

The book world is even more ramshackle in having developed its complex. For science fiction is virtually as old as the novel itself. Certainly the pre-scientific-age current was not correctly in *Don Quixote*, in *Gulliver's Travels*, in *Frankenstein* and other so-called classics. The Gothic novels of the late-eighteenth and early-nineteenth centuries contained frequent traces of primitive sci, as did virtually all of the Utopian novels of the latter part of the century.

Jules Verne wrote science fiction themes into scores of his books as, of course, did [Verne page]

"You ought to get a medal!"

says!

"NOT HAD FROM  
YOUR BACK.  
"THE FINEST-LOOKING  
RESEARCHER  
SHOULD GET A  
MEDAL!"



LOOKING UPON AN INVENTOR WHOSE FIRST AND SECOND  
AND THIRD AND FOURTH AND FIFTH AND SIXTH AND SEVENTH AND EIGHTH AND NINTH AND TENTH AND ELEVENTH AND TWELFTH AND THIRTEENTH AND FOURTEENTH AND FIFTEENTH AND SIXTEENTH AND SEVENTEENTH AND EIGHTEENTH AND NINETEENTH AND TWENTIETH AND TWENTY-FIRST AND TWENTY-SECOND AND TWENTY-THIRD AND TWENTY-FOURTH AND TWENTY-FIFTH AND TWENTY-SIXTH AND TWENTY-SEVENTH AND TWENTY-EIGHTH AND TWENTY-NINTH AND THIRTIETH AND THIRTY-FIRST AND THIRTY-SECOND AND THIRTY-THIRD AND THIRTY-FOURTH AND THIRTY-FIFTH AND THIRTY-SIXTH AND THIRTY-SEVENTH AND THIRTY-EIGHTH AND THIRTY-NINTH AND FORTIETH AND FORTY-FIRST AND FORTY-SECOND AND FORTY-THIRD AND FORTY-FOURTH AND FORTY-FIFTH AND FORTY-SIXTH AND FORTY-SEVENTH AND FORTY-EIGHTH AND FORTY-NINTH AND FIFTIETH AND FIFTY-FIRST AND FIFTY-SECOND AND FIFTY-THIRD AND FIFTY-FOURTH AND FIFTY-FIFTH AND FIFTY-SIXTH AND FIFTY-SEVENTH AND FIFTY-EIGHTH AND FIFTY-NINTH AND SIXTIETH AND SIXTY-FIRST AND SIXTY-SECOND AND SIXTY-THIRD AND SIXTY-FOURTH AND SIXTY-FIFTH AND SIXTY-SIXTH AND 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# In Your Mind's Eye

## The Secret of MENTAL CREATING

**I**f you just like to dream, read no farther. There comes a time when your dreams must be brought into light—and stand the test of every-day, hard realities. Are you one of the thousands—perhaps millions—whose thoughts never get beyond the stage of mental wishing? Do you often come to from a doze with the sigh, "If only I could bring it about—would it really?"

All things begin with thought—it is what follows that may take your life out of the class of those who hope and dream. Thought energy, like anything else, can be dissipated—or it can be made to produce actual effects. If you know how to plan your thoughts you can stimulate the creative processes within your mind—through them you can assemble things and conditions of your world into a happy life of accomplishment. *Mental creating* does not depend upon a magical process. It consists of knowing how to channel your thoughts into a power that draws, compels and organizes your experiences into a worth-while design of living.

## ACCEPT THIS FREE BOOK

Let the Rosicrucians tell you how you may accomplish these things. The Rosicrucians (not a religious organization), a world-wide philosophical fraternity, have preserved for centuries the ancient, mystical knowledge of the functioning of the inner mind of man. They have taught men and women how to use this knowledge to create their lives. They offer you a free copy of the illuminating book, "The Mystery of Life." It tells how you may receive this information, for study and use. The coupon opposite.

**The ROSICRUCIANS**  
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CALIFORNIA

EDWARD W. D. S.  
The Rosicrucians (AMORC)  
San Jose, California

Please send me copy of "The Mystery of Life,"  
and I shall send it no money.

Name.....  
Address.....  
City.....

# LUCK WAS WITH TOM WHEN...



OF COURSE, THE BANDIT IS SHOOTING THE LAST AND BEST DANGEROUS GUY IN HIS GANG OFF THROUGH BAD CANYON WHEN . . .



GOD MY HORSE'S TAIL!



TALK CHEAP, BUT IN CERTAIN CIRCUMSTANCES...

THAT IS, STRAIGHT, COME OUTSIDE, FOR THE LADY I'VE BEEN MADE TO GO ON FOOT.



WELL, WITH I SUPPOSE ABOUT READY.

OH, AND, BETTER GET ANOTHER PLACE, WE HAVE COMPANY.



WELL, BOY, DUCK AND A BAZON, TOO.

THANKS A LOT.



WANT AN EASY DRIVE? I EXPECTED TROUBLE WITH TWO BIRDY REVENGE.

THINK COLLECTING INSURE MEAL OFF REVENGE QUICK AND EASY.



CAN I GET A TRAM IN MY CITY?

THINK'S GOOD HERE AND THE LINE COMPANY, DON'T GET ANY A TRAM.

I DON'T FEEL LIKE ANYMORE.



WELL, HELL, SHOPPING, I'LL MAKE MY FELLO.

WELL, THEN YOU DON'T KNOW WHEN YOU'LL BE BACK.

YE OLD



YOUR FACE LOOKS WELL GROOMED AND FEELS GOOD. AFTER A REFRRESHING TRIM GILLETTE SHAVE. THE NEW-FRONT BLADE IS POWERFULLY SHARP AND LONG-LASTING. AND IT FITS YOUR GILLETTE RAZOR ASSURANTLY AND PERFECTLY. YOU KNOW THE DISCOMFORT OF CRUMBLY SHAVES. ARE FOR THE GILLETED IN THE CONVENT OF BLADE COMMITMENT.



NEW SH-BLUE PRODUCE HAS COMMITMENT FOR GIL-BLUES.

# The FIVE GOLD BANDS

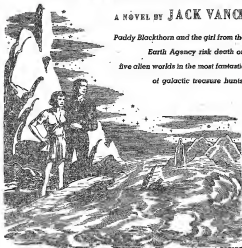
## CHAPTER I

### *Tunnel to Nowhere*

**T**HE tunnel ran through layers of red and gray sandstone cemented with silica—tough digging even with the patent grab-compactor. Twice Paddy Blackthorn had broken into old walls, once into a forgotten graveyard. Archaeologists would have chewed their fingernails to see Paddy crunching aside the ancient bones with his machine. Three

A NOVEL BY JACK VANCE

*Paddy Blackthorn and the girl from the  
Earth Agency risk death on  
five alien worlds in the most fantastic  
of galactic treasure hunts!*



Peg and Paddy stood looking at the fog below (Chap. VI)

## The Parent Planet Suffers from a Space-Drive

hundred yards of tunnel and the last six feet were the worst—two yards of feather-delicate explosive, layers of steel, copper, durable, concrete, films of guard circuits.

Edging between the pockets of explosive, melting out the steel, leaching the concrete with acid, tenderly shorting across the alarm circuits, Paddy finally pierced the last layer of durable and pushed up the congection flooring.

He heaved himself up into the most



FAY BURSILL

secret spot of the known universe, played his flash around the room.

Drab concrete walls, dark floor—then the light glinted on ranks of metal tubes. "Doesn't that make a pretty sight, now," Paddy murmured rapidly.

He moved—the light picked out a cubical frame supporting complexities of glass and wire, placket and durable, metal and manikoid.

"There it is!" said Paddy, his eyes lustrous with triumph. "Now if only I could pull it back out the tunnel, then wouldn't I lord it over the high and mighty! . . . But no, that's a sweet dream; I'll content myself with mere riches. First to see if it'll send out the blue flame. . . ."

He stopped gingerly around the mechanism, peering into the interior. "Where's the button that says 'Push' . . . There's no clue—ah, here!" And Paddy advanced on the control panel. It was divided into five segments, each of which bore three dials calibrated from 0 to 1,000 and, below, the corresponding control knobs. Paddy inspected the panel for a moment, then turned back to the machine.

"There's the socket," he muttered, "and here's one of the pretty bright tubes to fit. . . . Now I throw the switches—and if she's set on the right readings, then I'm the most fortunate man ever out of Skibbereen, County Cork. So—I'll try her out." On each of the five panels he flung home the switches and stood back, playing his light expectantly on the metal tube.

Nothing happened. There was no quiver of energy, no flicker of sky-blue light whirling into a core down the center of the tube.

"Sacred heart!" muttered Paddy. "Is it that I've tumbled all this time for the joy of it? Och, there's one of three things the matter. The power's disconnected or there's a master switch yet to be thrown. Or third and worst the dials are at their wrong settings." He rubbed at his chin. "Never say die, it's the power. There's none coming into the entire gurgan." He turned his light around the room. "Now there's the power leads and they run into that little antechamber."

He peered through the arch. "Here's the master switch and just as I told all who had ears to listen it's open. Now—I'll close it and then we'll see. . . . Whisht a while. First am I safe? I'll stand behind this bar-block and push home with this bit of pipe. Then I'll go in and play those dials like Biddy on the hobbins."

He pushed. In the other room fifteen tongues of purple flame curled frantically out of the metal tube, lashed at the walls, fused the machinery, flung masonry at the bar-block, made chaos in a circle a hundred feet wide,

## Slumpathy Which Khabats the Universe Headhanded?

When the Kudthu guards probed the wreckage Paddy was struggling feebly behind the dented bar-block, a tangle of copper tubing across his legs.

A KHABATS' jail was a citadel of old brown brick, hugging the top of Jailhouse Hill like a scab on a sore thumb. Dust and the dull texture of the bricks gave the illusion of ruins, baking to rubble in the heat of Prosperus. Actually, the walls stood thick, cool, firm. Below to the south lay the dingy town. To the north were the Akhabats' spaceyards. Beyond stretched the plain, flat and blue as mildew—as far as the eye could reach.

The Kudthu jailer woke Paddy by running horny fingers along the bars. "Earther, wake up."

Paddy awoke, feeling his throat. "No need to break a man's sleep for a hanging. I'd be here in the morning."

"Come, no talk," rumbled the jailer, a manlike creature eight feet tall with rough gray skin, eyes like blue satin pincushions where a true man's cheeks would have been.

Paddy stepped out into the aisle, followed the jailer past rows of other cells, whence came snores, rumblings, the hardening stare of eyes, the hiss of scale on stone.

He was taken to a low brick-walled room, cut in half by a counter of dark bronze wax-wood. Beyond, around a long low table, sat a dozen figures more or less manlike. A matter of conversation died as Paddy was brought forward and a row of eyes swung to stare at him.

"Ah, ye sculpins," muttered Paddy. "So you've come all this way to peer at a poor Earther and his only sin was stealing space-drives. Well, stare then and be damned!" He squared his shoulders, glanced down the long table from face to face.

The Kudthu jailer pushed Paddy a little forward, and said, "This is the talker, Lord Councillors."

The hooded Shaul Councillor, after a moment's staring, said in the scruff

Shaul dialect, "What is your crime?"

"There's no crime, my Lord," replied Paddy in the same tongue. "I am innocent. I was but seeking my ship in the darkness and I fell into an old well and then—"

The jailer said, fumbling the words, "He was trying to steal space-drives, Lord Councillor."

"Mandatory death." The Shaul raised Paddy with eyes like tiny lights. "When is the execution?"



PADDY BLACKTHORN

"Tomorrow, Lord, by hanging."

"The trial was over-hasty, Lord," exclaimed Paddy. "The famous Langtry justice has been scamped."

The councillor shrugged. "Can you speak each of the tongues of the Line?"

"They're like my own breath, Lord! I know them like I know the face of my old mother!"

The Shaul Councillor sat back in his seat. "You speak Shaul well enough."

The Koton Councillor spoke in the throaty Koton speech. "Do you understand me?"

Paddy replied, "Indeed I believe I'm the only Earther alive that appreciates the beauty of your lovely tongue."

The Alpharatz Eagle asked the same

question in his own lip-clicking talk. Paddy responded fluently.

The Hades and the Lorientines each spoke and Paddy replied to each.

There was a moment of silence during which Paddy looked right and left, hoping to catch a gun from a guard and kill all in the room. The guards wore no guns.

The Shaul asked, "How is it you are master of so many tongues?"

Paddy said, "My Lord, it's a habit with me. I've been journeying space

and there'd be no temptation for us poor unfortunates."

"I do not ask the question, Earthier. That is in the hands of the Sons. Besides



As Earthier was  
as was perform-  
ing an earth-  
dance (Chap.  
VII)

since I was a lad and no sooner am I hearing strange speech than I'm wondering what's going on. And may I ask why it is you're questioning me? Are you greeting me for a pardon perhaps?"

"By no means," replied the Shaul. "Your offense is beyond pardon, it cuts at the base of the Langtry power. The punishment must be severe, to deter future offenders."

"Ah, but your Lordships," Paddy remonstrated, "it's you Langtrys who are the offenders. If you allowed your poor cousins on Earth more than our miserable ten drives, then a stolen drive would not bring a million marks

there are always secondaries to steal ships and unmounted drives." He fixed Paddy with a significant glance.

The Koton Councillor said abruptly, "The man is mad."

"Mad?" The Shaul studied Paddy. "I doubt it. He is volatile—irreverent—unpredictable. But he appears sane."

"Unlikely." The Koton swung his thin gray-white arm across the table handed the Shaul a sheet of paper.



"This is his psychograph."

The Shaul studied it and the skin of his cowl rippled slowly.

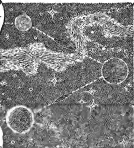
"It is indeed odd . . . unprecedented . . . even allowing for the normal confusion of the Earthier mind. . . ." He glanced at Paddy. "Are you mad?"

PADDY shrugged. "I take it I'd hang in any event."

The Shaul smiled grimly. "He is sane." He looked around at his fellows. "If there is no further objection then . . ." None of the Councillors spoke. The Shaul turned to the jailer.

"Handcuff him well, blindfold him—have him out on the platform in twenty minutes."

"Where's the priest?" yelled Paddy. "Get me the Holy Father from Saint Alban's. Are you for hauling me up



without the sacrament?"

The Shaul gestured. "Take him."

Muttering wild curses Paddy was handcuffed, blindfolded, crow-legged out into the sharp night air. The wind, smelling of lichen, dry oil-grass, smoke, cut at his face. They led him up a ramp into a warm interior that felt solid, metallic. Paddy knew by the smell, compounded of oil, sevens, acryl varnish, and by the vague thrub and vibration of much machinery, that he was aboard a large ship of space.

They led him to the cargo hold, removed the handcuffs, the blindfold. He looked wildly toward the door but the way was blocked by a pair of Redthra

attendants, watching him with blue-bottle eyes. So Paddy relaxed, stretched his sore muscles. The Kuditha attendants departed, the port swung shut, the dogs scraped down tight on the outside.

Paddy inspected his quarters—a metal-walled room about twenty feet in each direction, empty except for his own person.

"Well," said Paddy, "there's nothing to it. Complaints and protests will do me no good. If those Kuditha devils had been a quarter-ton lighter apiece, there might have been a fight."

He lay on the floor and presently the ship trembled, took to the air. The steady drone of the generator permeated the metal and Paddy went to sleep.

He was roused by a Shaul in the pink and blue garb of the Scribe caste. The Shaul was about his own size with a head shrouded by a cowl of fish-colored skin. It was attached at his shoulders, his neck, the back of his scalp and projected over his forehead in a widow's-peak of flexible black flesh. He carried a tray which he set on the floor beside Paddy.

"Your breakfast, Earther. Fried meat with salt, a salad of bog-greens."

"What kind of meat?" demanded Paddy. "Where did it come from? Akkaba?"

"Steers came aboard at Akkaba," admitted the Shaul.

"Away with it, you hooded scoundrel! There's never a bite of meat on the planet except that of the Kudithas that's died of old age. Be off with your cannibal food!"

The Shaul flapped his cowl without remark. "Here's some fruit and some yeast cake and a pot of hot brew."

Grumbling, Paddy ate his breakfast, drank the hot liquid. And the Shaul watched him with a smile.

Paddy looked up, frowned. "And why then your crafty grin?"

"I merely observe that you appear to enjoy the broth."

Paddy set down the cup, coughed and spat. "Ah, you devil. Once that your tribe broke loose from Earth they forgot all decency and manners. Would I

be feeding you with gheul-food? Would I now, was we reversed?"

"Meat is meat," observed the Shaul, gathering the utensils. "You Earthers are oddly emotional about trivialities."

"By no means," declared Paddy. "We're the civilized ones of the universe in spite of your pretensions. It's you far-off heathens that have brought Mother Earth to her knees."

"Old stock must give way to newer types," said the Shaul mildly. "First the Pithacanthropi, then the Neanderthals, now the Earthers."

"Feh!" Paddy spat, "Give me thirty feet of flat ground with a bit of spring to it and I'll whip any five of you skin-heads and any two of them Kuditha hulks."

The Shaul smiled faintly. "You Earthers don't even throw well. After two months tunneling you're not five minutes in the building before you blow it up. Lucky there was only a trickle of current coming in or you'd have flattened the city."

"Sorry," answered Paddy. "We Earthers only invented space-drive in the first place."

"Tangtry discovered space-drive—and that by accident."

"And where'd you be without him?" asked Paddy. "You freak races are coasting on what old Earth gave out to you in the first place."

SAID the Shaul, smiling, "Answer me this—what may be the fifth root of a hundred and twelve?"

"Let me ask you," said Paddy craftily. "because you worked the sum just now before you came in. Now give me the seventh root of five thousand."

The Shaul closed his eyes, brought into his visual imagination a mental picture of a slide-rule, manipulated it mentally, read the answer. "Somewhere between three point three seven and three point three eight."

"Prove it," Paddy challenged.

"I'll give you a pencil and paper and you may prove it," said the Shaul.

Paddy compressed his lips. "Since you're so knowledgeable perhaps you'll



know where we're off to and what it is they're wanting with me?"

"Certainly," said the Shaul. "The Sons of Langtry are holding their yearly council and you are to interpret for them."

"Sacred heart!" gasped Paddy. "How is this again?"

The Shaul said patiently. "Every year the Sons from the Five Worlds meet to arrange quotas and distribution of space-drivers. Since regrettably there is jealousy and suspicion between the Five Worlds no single tongue is spoken. The Sons of the other four worlds would lose face.

"An interpreter is an easy expedient. He translates every word into four other tongues. The Sons gain time to reflect, there is complete impartiality and no damage to planetary pride."

The Shaul laughed silently a moment, then continued. "The interpreter, you must understand, performs no critical service since each of the Sons knows—to some extent—the tongue of the other four. He is merely a symbol of equality and even-based cooperation, a lubricant between the easily offended Sons."

Paddy rubbed his chin doubtfully. He said in a hushed voice, "But this proceeding is the secret of the galaxy. No one knows when or where it occurs. It's like the rendezvous of shameful lovers for the secrecy."

"Correct," said the Shaul. He eyed Paddy with bright meaningful eyes. "As you may be aware, many of the archaic races are dissatisfied with the quotas; the Sons of Langtry gathered together make a tempting target for assassination."

Paddy gestured expressively. "Why am I selected for the honor? Surely there are others fully equal to the honor?"

"Yes indeed," agreed the Shaul. "I, for instance, speak each of the five tongues fluently. However I am no criminal condemned to death."

Paddy nodded with deep comprehension. "I see, I see. And suppose I refuse to serve as the mouthpiece, then what?"

"They put you through the nerve-suit once or twice, and generally you are eager for any chance at a quick death."

"Ah, the ugly creatures," groaned Paddy. "A man's will is no longer his own in these sad times."

The Shaul rose to his feet, picked up the dishes with fingers long and slender as pencils. He left the hold and a few moments later returned.

"Now, Earther, I must instruct you in the proper ceremonial. Certain of the Sons are insistent on decorum. Luckily—since we arrive at the rendezvous tomorrow—there is little to learn."

## CHAPTER II

### Questionnaire

THE Shaul awoke Paddy the next day with his breakfast, a razor, a mist-bath, fresh linen, a pair of thick-soled sandals. Paddy hefted the last questioningly.

"You'll be walking on rock," the Shaul explained.

Paddy shaved, stripped, cleaned himself with the spray from the mist-bath, slipped into fresh garments. He stretched his arms, felt his face.

"Now, my skinheaded friend, you've treated me well or else, just to show my contempt for the whole proceedings, I'd begin to wipe up the hold with you."

The Shaul said, "There's a Kadithu guard within call if I needed one. Probably I would not."

"We have a difference of opinion," said Paddy. "Well then, a friendly little bout to decide the issue. One throw, catch-me-catch-ee, just for the sport of it, with no eye-gouging, no skin or hair pulling. I've shaved my whiskers and shed my dirt and I'm a new man."

"As you wish," said the Shaul with a grin that showed pointed teeth of grey metal.

Paddy advanced, laid a hand on the Shaul's arm. The Shaul slid away like a ground-skel, clasped with corded arms,

twisted. Paddy's legs sagged under an unfamiliar leverage. He resisted an instant, then gave, flung himself headlong, gathered his feet below him, heaved, and the Shaul tumbled to the deck. Paddy was on him, had his back to the floor. Eye to eye they stared, Paddy's gray-yellow eyes, the Shaul's bright orbs.

Then Paddy jumped up and the Shaul arose, half-sullenly.

"Ah, we're still men on Earth!" growled Paddy. "You skinheads can do the square-root, I'll grant you, but for the good side-men in a rough-and-tumble give me one from green old Mother Earth!"

The Shaul gathered up the old clothing, the breakfast dishes, turned to look at Paddy. "Amazing," he said. "An amazing race, you Earthers." He departed, the door closed behind him.

Paddy frowned, bit his lip. "Now just how did he mean that?"

An hour later the Shaul returned, beckoned. "This way, Earther."

Paddy shrugged, obeyed. Behind him a silent Kudithu fell in, smiled along at his heels.

There was excitement aboard the ship. Paddy sensed it from the vibration of skin flaps of the various Shauls in the passages, the staccato bursts of conversation, the nervous flickering of long fingers. Peering through a port-hole he saw black space and far off a specker of stars.

About a mile distant hung a great ship with a gray and blue medallion, the ship of the Koton Son. Outside, close against the hull a small clear-domed boat came gliding, coasted to the entrance plug. The Kudithu pushed at the back of Paddy's head. "Forward, Earther."

Paddy turned, growled. The Kudithu took a step forward, loomed over him. Paddy moved to keep from being trampled.

At the entrance deck a row of Shauls stood with skin flaps distended, rigid as sails, eyes gleaming like tiny light bulbs.

The Kudithu clamped a great hand

on Paddy's shoulder. "Stand back. Silence. Be reverent. The Shaul Son of Langtry."

The stillness reminded Paddy of the thick silence of a church during prayer. Then there came a rustle of cloth. An old Shaul with a withered cowl strode down the corridor. He wore a tunic of white cloth, a cuirass enamelled with the scarlet-and-black medallion of Shaul. Looking neither right nor left he stepped through the port out into the crystal-domed boat. The port snapped shut with the suck of escaping air. The boat departed in a flicker of glass and metal. Twenty minutes passed without sound or movement. Paddy sidged, stretched, scratched his hand.

A him, a scrape—and the port opened again. The Kudithu pushed Paddy. "Enter."

Paddy, given no choice, found himself in the space-car, which was piloted by a Shaul in a black uniform. Two Kudithu guards followed him into the boat. The port was closed, the boat drifted off into the black gulf, away from the bright heavy side of the ship.

"Now's the time," thought Paddy. "Knock out the two guards, throttle the pilot." He hunched forward, knotted the muscles of his back for a spring. Two great gray hands folded down his shoulders, clamping him on the neck. Paddy, turning his head, saw the blue satin puffballs, which were the eyes of the Kudithu guard, regarding him with suspicion. Paddy relaxed, looked off through the crystal dome.

THE saw the Shaul ship a mile distant, then slightly farther out the Baden ship, with a blue and green medallion amidships—at various distances three other hulls. Dead ahead lay a tiny asteroid, lit along one surface by a high circle of luminous tube.

The boat landed on the asteroid, the port opened. Paddy, expecting the boat's air to rush out into airless space, tensed, gasped, made a warning gesture. Nothing of the sort occurred. There seemed to be an equal pressure of air outside.

The Kothku thrust him out. He found himself walking to normal gravity though the asteroid, a rock the shape of a man's foot, was hardly two hundred feet across its longest diameter. A gravity well must be operating, surmised Paddy—somewhere on the underside of the rock.

Below the circle of bright tiling a floor of polished granite slabs had been laid with a pattern of baroque pentagons (set in gold surrounding a large central star of bright red coral or diamond). Five heavy chairs faced inward toward a circular cockpit three feet in diameter, a foot deep.

The Shaul pilot said to Paddy, "Come." The Kothku guards bowed. He set out angrily after the Shaul, followed him up onto the brightly lit circular platform and to the central cockpit.

"Step down."

Paddy hesitated, gingerly looking into the opening. The Kothku pushed him—willy-nilly he stepped down. The Shaul stopped, there came the rattle of chain, a clank and a hand encircled Paddy's ankle.

The Shaul said in a hurried voice, "You occupy a very exalted position. See that you bear yourself with respect. When one of the Sons speaks repeat his words in the appropriate language to each of the other Sons—in clockwise order away from the speaker.

"Suppose the Shaul Son who sits in the chair yonder speaks, repeat his words first in Leishness to the Son there"—he pointed—"then in Koton to

the Son from Kote, then in Badois to the Badas Son and in Phorak to the Son from Alpharatz A. Do you understand?"

"Very well," said Paddy. "That much of it. What I wish to know is, after I complete my services, what then?"

The Shaul turned half away. "Never mind about that. I can assure you of unpleasantness if you conduct yourself improperly. We Shauls do not torture but the Badas and the Koton have no scruples whatever."

"None at all indeed," said Paddy with conviction. "I went to Montrea on Kote to a public torturing and the blood-letting quite turned me against the devils. There's a city of hell, that Montrea."

"Conduct yourself well, then," the Shaul told him. "They are more than ordinarily intractable, these five Sons. Speak loudly, correctly and mind you, clockwise from the speaker, so there will be the most complete equality of place."

He sprang away from Paddy, ran to the boat and the Kothku guards lumbered after him.

Alone on the tiny world Paddy searched the sky to see what had occasioned the haste. The five ships, about two miles distant, had drifted together into a roughly parallel formation with their bows toward Paddy.

It was a rather oddness sensation, alone and manacled to this bit of nameless rock, exposed like a victim on an altar, Paddy bent to examine his bonds.

[To be sure]

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**BROMO-SELTZER**

From the hand clamped about his ankle a chain led to a staple in the stone. He tested it, tearing till the skin of his hands tore and his stomach muscles knotted, to no effect.

He stood erect once more, studied his surroundings. There was no bar within reach he might use as a lever, no fragment of rock to pound with. He was completely alone, unless someone were stationed on the far side of the little space-island. Craning his neck, he saw a concrete casement and a flight of steps leading down into the rock. Toward the gravity unit, thought Paddy, and maybe an air generator.

He heard a swish, a drone. He looked up to see a shining space-boat settling almost at his head. It touched the surface, the dome swung back. The five Sons of Langtry stepped out. Silently in a formal line they advanced to the platform, the gaunt Eagle of Alpharatz. At one end, then the butter-colored Loristanese with the flickering features, the Sheel with the mottled cow, the saucer-eyed Koton and last the stocky Badan with the short legs and hump-head.

Paddy watched them approaching with hands on hips and a curled lip. He shook his head, "And to think their grandfathers were all decent Earthers such as me. See 'em now, like the magnificence in Kensington Gardens."

From the rear of the boat came two others, giant Kodithus. By their purple skins Paddy knew them for the deposed nearly mindless creatures produced by surgery and forced feeding. Huge muscular creatures they were with burnescent-red wattle like cocks.

They had been lobotomized to control their concentration and they moved like creatures in a hypnotic state. They took up posts at opposite ends of the asteroid, where they stood gigantic, quiet, blue puffball eyes fixed on Paddy.

The Sons of Langtry separated, took their seats. The Loristanese glanced at Paddy.

"An Earther this year," he observed cheerfully. "Occasionally they're good Roguists. They and the Sheels make

the best, I believe. But there are few Sheel criminals. I wonder what this race's done."

PADDY cocked his head, squinted a balefully. Then deciding that his duties had begun, he bowed to the Koton, repeated the words in the Koton tongue, did likewise for the Badan, the Eagle and the Sheel. In the final sentence however at the word "rascal" he substituted the Koton word *shakless*, equivalent to "reckless fellow"—the Badan's least, meaning "well-appointed knight" in the Robin Hood tradition—the Phoradic *akak-at*, meaning "swift flyer"; the Sheel conductor, derived from the old Tuscan *condottiere*.

Then he waited solemnly, politely, for further words. The Loristanese brushed him with a swift glance and a muscle quivered on the yellow jaw but he made no comment.

The Alpharatz Eagle spoke. "There is little to concern us at this meeting. I have observed no noticeable fluctuation in trade volume, and I see no need for military expansion. Last year's quotas should serve us well."

Paddy translated around the circle. There was a general attitude of agreement.

The Badan said, "I have several positions to be considered. First from Canopus Four—they want four drives for the purpose of transporting supplies and produce to and from one of their moons which they are using as a cattle range."

The Sheel said, "I have a similar position. My agents report that of their allotted sixteen drives they have destroyed five, presumably through experimentation in their laboratories attempting to discover the manufacturing process. I speak against the request."

After a few further remarks the position was denied.

The Badan said, "The second is from a private individual, a neo-anthropoid of the Neomorian type. He proposes to circumnavigate space. His plan is to seal himself in a ship, set forth and continue as far and as fast as possible

until either he returns or dies."

The petition was granted as being an interesting experiment and not likely to disturb the trade balances.

The Badau looked back to his notes. "Third a petition from Earth. The natives request a hundred more units."

"A hundred?" barked the Koten.

The Shaul leaned back in his chair, grinned. "They have retreated slightly from their previous position. If I recall, for the last fifty years they have demanded unlimited access to the production."

"Slowly they are acquiring a sense of the realities," rumbled the Badau.

The Loriatanese said, "There has been only a small rise in the index. I believe one of their units was destroyed in a wreck. Four or five units have deteriorated to the point of uselessness. If we replace those particular units I see little reason for further concessions."

Paddy licked his lips, translated to the Koten: "A small rise in the trade index has occurred. One of their units was destroyed in a wreck, five units have become useless. After replacing these units I see some slight reason for further concessions."

The Koten squared in his seat, turned his saucer eyes at Paddy. Paddy sucked in his breath. "Careful, lad," he told himself. "You're not dealing with the ignorant guards now." He turned to the Badau, aware of the Koten's cool stare.

"There has been only a slight rise in the trade index," said Paddy to Badau. "They wrecked one unit, four others have deteriorated. If we replace these I see no reason for further concessions." And Paddy relaxed as the Koten turned his saucer eyes elsewhere. "A cold clammy feeling it gives a man," thought Paddy. "And they're the ones that invented the nerve suit, the big-eyed devil."

He finished the round of translations carefully. After a slight pause the voice came in against the Earth petition.

Three other petitions were voted upon. Then the five sat in a rather lengthy silence, reflexively cysing

Paddy. Bathed in the full flood of soft white light he felt naked and exposed. "Here I am," he muttered disgruntledly. "Paddy Blackthorn, late of Shillboreen, County Cork, like a god on a block. It's the smallest slab of rock in the universe I'm tied to with five unithly creatures all fixing on the best way to serve up my corpse."

He looked up into the sky. The five ships hung parallel a few miles distant. "It's now time that the Holy Lord was reaching out to look after his own and I've been a good candle-burning Irishman my long life through."

The Shaul said, "Is there any suggestion as to new security regulations?"

The Eagle replied slowly. "A large vote on my planet favors wider dissemination of the secrets, or at least a public repository on each planet known to a responsible group. The argument, as always, assumes that a catastrophe wipes out the five of us simultaneously, whereas the technique of manifolding space-drive would be lost."

THE Koten said, "And as always the counter-argument is that five minds for one secret is already four more than necessary. A public repository could be looted by a sudden raid. Members of a committee could be kidnaped. Soon there would no longer be a secret. Space would be as full of ships as the Balthean Sea is of redworms."

The Badau stroked his lump of a head. "My position as always has been that the smaller the extent of critical knowledge, the better. And even if we were all killed the Bank of Loriatan would make the hiding-places of the data known to our successors."

"Only after ten years," the Eagle said dourly. "Ten years of doubt and confusion."

"Perhaps," said the Shaul easily, "we could make public proclamation to the effect that in the event of catastrophe, the secret would automatically come to light. We need not mention the lapse of ten years, as that would focus attention on the Bank of Loriatan. It's popular knowledge that ten years is the

period of grace on unrenewed auto deposit boxes."

The Koten said sourly, "Why not entrust the data itself to the Bank of Loristan?"

The Shaul grinned. "There are several reasons why this would not be desirable. Assume this hypothetical catastrophe. Ten years and the mechanism of the Bank automatically ejects the lapse boxes. There, before the eyes of a clerk, is the secret of space-drive. Secondly—"

"Your first reason is sufficient," said the Koten. "Perhaps the present system is the best."

"The mutual duplication of data protects us against loss of any one set," the Loristanese pointed out, "and the splitting of the secret guarantees a continuance of our mutual dependence."

The Shaul said abruptly, "Now as to the allocation for the five commercial units, eight hundred boat installations . . ."

One by one the Sons announced the needs of their worlds, and the total moved the Koten to grumble, "We shall be occupied three weeks on Akhabata activating the tubes."

"That is the function of our office," the Loristanese remarked.

"We'll be a week building a new manifold," said the Koten. "Scarcely raised of an Earther actually tunneled up into the shop, mark you. The fool threw the power switch and Akhabata is safe only because the main gang-bar had been removed for replating."

The Loristanese shrugged, and his fat yellow jaws bounced. "Naturally the dials had been twisted. What could the idiot hope to achieve?"

The Eagle said, "The way of an Earther's mind is past conjecture."

The Shaul made an impatient motion. "Is there any further question as to schedules? If not—"

"We have completed our business," stated the Badao heavily. "Let us make the exchange and depart." He unstrapped a thin band from his wrist, passed it to the Eagle on his left, who in turn handed a similar band to the

Shaul, who gave him to the Loristanese, who passed him to the Koten, who passed a hand to the Badao.

The Badao grinned in satisfaction. "We are finished for another year, save for the month of toll on Akhabata."

Paddy made himself as inconspicuous as is possible for a man chained to the middle of a brightly-lit store platform. They might be so engrossed in their talk as to leave him alone on the little world—which in any case would be equivalent to death, he thought gloomily.

If the gravity unit were turned off, the air would puff off into the vacuum of space and he would struggle, blow up with the bands. No such luck, in any event. He felt the Koten's saucer eyes upon him as the five arose. The Koten motioned to the guards.

The Koten said, "Remove the prisoner from the platform, secure him."

Paddy said quiescently, "Would you like that translated, my Lord Koten?"

The Koten ignored him. Paddy watched the Kudthas approaching, purple-skinned giants in black leather uniforms. Either one would make three of him. Here came his death, thought Paddy. How would it be? By bullet—by the heavy Kudthu knives hanging at their belts—by the mere wringing of his neck in the big slab hands?

They towered over him with no more malice or hostility than a farmer selecting a chicken for the pot. One stooped with a key, fumbled at his chains, while the other took a grip on Paddy's shoulder. Paddy's heart was thudding, his throat was thick with scorching fear. It was sad to die at the hands of strange careless things so far from Mother Earth.

## CHAPTER III

### *Treasure of the Ages*

THE leg was free. Paddy in a desperate crouch sank to his knees, hit at the big Kudthu hand, grabbed the

knife from the belt of the kneeling Kudthus, hacked at the other's legs. The grip loosened. Paddy broke free, sprang like a rabbit down from the platform. The Shaul brought forth a small hand-weapon, sighted, fired. Paddy veered and the shaft of flickering blue ions cut past his ear.

The Kudthus came lumbering after him, big faces without expression. Another shaft of radiation skinned past him and he dodged frantically. His mind ran wild. He'd run and run and run to the end of the world. The end of the world was close. Where then? The space-boat? No, the Shaul stood near with his weapon. Where to go? Around the other side? They'd hunt him down.

The concrete cement yawned at his feet, a dim-lit gap. There it was, a bolt-hole, where at least he could put his back to the wall, where they would not turn their guns for fear of disrupting the gravity. . . .

The gravity! Off with the gravity! Death to himself, death to all! Would it possibly be unguarded, unwatched?

He flung down the steps four at a time, pulled by the increasingly strong gravitational field. He came to a little concrete-walled room. A black box ten feet long was mounted on skids with heavy leads running to a power bank. Paddy took a deep breath, plodded across the room, pulled the switch.

The power stopped, the field whizzed off into nothingness. Paddy was weightless. Air puffed off into space at eleven hundred feet a second. A tremendous force pushed out Paddy's chest as if by an explosion inside him. Breath gushed up his throat, spewed out his mouth and he felt a quick distension in his legs, his arms, felt his ears pounding, his eyes bulging.

He tottered to the switch, threw it back to full gravity. He was master on this little world, lord of life and death. Too late, he thought numbly—useless. The air had departed at the speed of sound and faster. It would return only at gravitational acceleration.

The vacuum would be nearly complete for an hour yet, while all on the little

world died. Not so—he felt the tingling at his skin slowly diminish, the throbs of his throat lessen. He opened his mouth, gasped. Air—air in the little room at least, very rare yet, seepage from cracks, a film held by molecular attraction and the gravity of the asteroid itself, now concentrated around the gravity unit.

Paddy dragged himself up the stairs against the gravity, segmented as it was by his nearness to the unit. As he climbed he felt the atmosphere rapidly thinning. His head pounded in a near-vacuum as he peered over the casement. The Kudthus lay sprawled twenty feet distant in the dark pool of their haw-corrugates. The five sons of Langtry lay dead in a little clump around the boat. Paddy blinked, taken aback.

The most appalling crime in the history of space had been committed. Genocide, defilement of holy places, treachery against the entire universe—no sin could rival his deed. The Five Sons dead by his hand!

PADDY licked his puffed lips. It seemed a great to-do for the mere pulling of a switch. They would have killed him without glancing to see whether his way was to look or to twitch. He looked across the platform at the boat, stared past the luncheon table at the five ships.

They lay in a quiet parallel rank. No, could not the fools sense the horror? Or their telescopes must tell them something was amiss. Of course they might be under orders to keep eyes away from instruments for fear that there might be lip-reading.

Paddy looked back to the boat with the longing of a lover. His sight was blurring pink, blood was running from his nose. The hundred feet to the boat was like a thousand miles. Two feet above the concrete casement meant strangulation. He hacked down the shaft to breathe and gather his wits.

He considered. How would the gravity unit be turned off? By someone in a pressure suit, to escape his own doom. Would there be such a garment left at

hand for the purpose? He found it hanging in the shadows behind the power-bank, and was into it with what speed he could provoke from his trembling fingers.

He fitted the dome over his head, turned on the air. Ah-h-h, what a blessed thing was the pure thick air with a taste like the finest water.

But no time to savor his air. Up—if he wished to escape the nerve-cult. He sprang up the steps, darted across the dead world. At the corpse of the five Sons of Langtry he stopped short. Around the Shaul's thin forearm he found a glint of gold, unclasped the band. Then to the Koten, the leathery Radex, the Eagle and the better-yellow Lockstange.

Jingling the five bands Paddy ran to the ship. Inside the port, threw home the dogs, to the pilot's seat. He groped among the controls until he found the lift-valve. Latching it open he raised the ship a trifle above the surface, slewed it slowly around to the opposite side of the world.

Then, keeping the little asteroid between himself and the five ships as long as possible he turned the accelerator on full and the little ship fell out, out, out—into the deep well of space with stars flickering like shiny pebbles at the bottom.

New—on with the space-drive and he was safe. Safe!

He slumped back into the seat, fell into a torpor, . . .

Paddy looked about his ship, letting the sight of gleamy metal and glass, the fittings, fabrics, the exquisite equipment gladden his vision, luxuriating in the surroundings like a gourmet rolling the flavor of a fine sauce through his mouth.

Paddy rose from the couch, stretched like one reborn. The boat was a new life, a symbol of rebirth. His past seemed remote as if only a tenuous wisp linked Paddy Blackthorn of the Akkshata jail and Paddy Blackthorn standing on the deck-covering of crisp scarlet eggshell pile.

Paddy clapped his arms to his sides,

grinned with honest joy. Not only was he free with his life—enough to rejoice about—but he had played a devastating joke on his would-be slayers. A magnificent joke to make his name one for history. It was the pattern of circumstances that exactly filled a socket in the human brain, the latter bit, the belly tripped up by the underdog into a gutter full of slaps.

Paddy strolled here and there, surveyed his prize. It seemed to be engineered less for cruising than for use as an interplanetary pleasure-boat. It carried no large supply of stores, no arsenal.

The fittings were of a quality and precision befitting the ceremonial boat of the Sons of Langtry. The joiner-work was a rare wood from a far planet, showing a grain of black and golden-green. There was a brown-violet mantle upholstery on the couch and the scarlet carpet with the pile that was like stepping on candied rose-petals.

Paddy returned to the pilot's platform, studied the astragation instrument. A boat of this type, with no cost spared on its construction would embody new equipment, much of which might be unfamiliar to him. And as he glanced along the panel he found levers, dials, arms, whose use he did not comprehend. He left them untouched. For all he knew one might set off an emergency SOS call.

**H**E returned to the wide couch, inspected the shiny heap of his boot—five bands of gold, each with a thin square compartment. Paddy stood back with a sensation close to awe. "Here," he said, "is the treasure of the ages, which all the wealth of Earth would buy cheap. . . . And it's me, Paddy Blackthorn, who handles these lovelies.

"But now let's open them and we'll see how to curl space-drive into them shiny tubes so next time there won't be that great explosion. . . ."

He snapped off the lid of the first, withdrew a bit of stiff parchment. It was imprinted with heavy Radak letters:



The Kerkorogues Approached Seite 18  
The Fabled Man's Inclination Page 188

Paddy raised his eyebrows high. "And what's this?" He was thunder-struck, apprehensive. Was there some colossal error?

"Ah, well," said Paddy, "now we'll see." He opened the second band.

Like the first it contained a bit of parchment, written in Phoenician script which Paddy could not read. He passed on to the third, which was stamped with the neat Shael suniform:

Cyrenaea, the back wall

Three up, two over

Immediate with anagrams 434, 1444, 2044, 3041.  
Photograph.

Paddy groaned, opened the fourth band. It held a key, engraved with the Lorianian loops and lines, nothing more. Paddy tossed it aside.

The parchment in the Koton band read:

The Plate of Teth, where Arma-Goth shows the horizon in the yearning stars.  
Under my mighty right hand.

Paddy flung himself back on the couch. "A bloody treasure-hunt, that's what!" he cried. "And to think I've risked all for the only clues. Well, then, by Fergus, I'll find them from the port and have done with it!"

But he folded the four parchment slips carefully around the key, and replaced them in one of the bands, which he fitted on his own wrist.

"Now for home," thought Paddy. "Peace and quiet and no more of this space-rambling—and yet—" He rubbed his chin dubiously. He was by no means safe. He had escaped the asteroid with his skin, but the Langtry ships swarmed space-like warps in a shed.

He was safe from the rear. But was he safe from interception? Space-wave messages flew as swiftly as thought. The description of the boat and Paddy's personal coordinates would reach every outpost in space. Paddy would be the quarry of the universe. Ordinary misdeeds would go unchallenged while the authorities combed the worlds for Paddy Blackthorn.

Realization warped to fretful anxi-

ous. In his mind's-eye he saw the placards, tacked up in every saloon, every post office, every transportation agency in the known universe—displaying his picture and the caption—

WANTED—for interplanetary assault  
Paddy Blackthorn, Barther, Gargantuan  
Height, six feet, weight, one hundred eighty pounds. Age, approximately thirty. Red-brown hair, hazel eyes, broken nose.

"And then," grumbled Paddy, "there'll be my fingerprints, my tongue-print, my psychograph. They'll describe the hairs of my head and they'll write at the bottom, 'Catch this fiend and name your own reward.' I'm cursed with the luck of the devil himself. There's no haven for me on Earth, no place for me but the Thieves' Cluster—and then how long?"

He rummaged through the chart index, found the proper code, pushed the buttons and in front of him, projected by a series of lenses, appeared the sphere of space surrounding the Thieves' Cluster.

At the edge a blue gleam of light indicated his own position with a white arrow indicating the vector of his position and course. Paddy sighted, gingerly changed course until the vector pointed at the Thieves' Cluster.

He turned on the space-wave. It was saturated with coded messages. Let 'em rave, thought Paddy. Once in the Thieves' Cluster, not even the Sons of Langtry could drag him forth. Of course they might send agents in to assassinate him. But would they? He was the only man alive who knew, if not the secret of space-drive, the whereabouts of the secret.

## CHAPTER IV

### *Space Fugitives*

THE Thieves' Cluster was a group of eight suns in the Persian Limbo which had picked up a jostling swarm of dark stars, planets, planetoids, aster-

side, meteorites, and general debris. Here was end-haven for the lost men of all worlds. Among the hundred thousand satellites a man could dodge a low-head like a rabbit ducking a dog in a mile of blackberry thicket.

If he cared nothing for the life of the settled planets, if he had money to pay for his stores, if he could protect himself, then he could live his life among the jostling little worlds with small fear of civilized justice.

There was no law in the Thieves' Cluster except at Eleanor on the central planet Spade-Ace. Here a government of sorts existed—an order of men forced to cooperate by fear and despair, a society of the antithetical. The executive committee of the government was the Blue-nose Gang, after Blue-nose Pete, mayor of Eleanor.

At Eleanor the strictest law in the universe was enforced. If a man could win in the Eleanor space-field he could sleep in an alley with his foot on his chest and when he awoke his palm would be there. The apparatus was clumsy and harsh but if a man violated the law of Eleanor the Gang would have his life.

Paddy slipped through the crush of flaming suns and bright worlds without hindrance, fell against the swampy side of Spade-Ace, leveled off, flew screaming a few miles above the red-covered morass. A ridge of black rock rose at the horizon. He crossed it and below him was Eleanor, a splotch of white and brown at the base of the mountain.

He dropped to the field ~~below~~ the alteration docks, where a Radan double-motor lay half-dismantled.

He jumped out of the dented boat, ran across the field to the line of ships at the boundary. At a hydrant he flung himself down, turned on the water, drank, drank, drank.

An Earther lounging nearby, a tall dark man with narrow yellow eyes, watched him curiously. "Run out of water, Red?"

Paddy pulled himself to his feet, ran his wet hands across his face.

"Faith, I've eaten shrimp preserved in sweet syrup now it's four days and

vile fare it is, believe me, after the third bite."

"Sounds rough," said the tall dark man. He nodded at the boat. "Nice rig you're flying. Planning to sell or holding on to her?"

Paddy leaned against the hangar. "Perhaps you'd spare a cigarette? Thanks." He blew out a great puff of smoke. "Now as to the ship, as I am without funds, I think she'll have to be sold. What might a boat like that bring?"

The Earther squinted reflectively. "A hundred thousand, maybe a little more. Say a hundred thirty."

Paddy rubbed his face, already red-bearded. "Reason. The drive alone is worth a million on Earth."

"This ain't Earth, Red."

"If what I hear of prices here in the cluster is so, that'll feed me about a month."

The Earther laughed. "Not quite that bad. Depends on what kind of service you like. The Casino Lodge up Napoleon Street is high. If you want something cheaper, try the Bowgrit, down Pick-pocket Alley. It's clean but not too stylish."

Paddy thanked the man gravely. "And perhaps you can tell me the best place to sell the boat because in truth I haven't a cent to my pocket."

The tall man pointed across the field. "If you want a quick deal go in that door with the yellow glass. Tell the Canope girl you want to talk to Ike."

Paddy drove a hard bargain, eloquently describing the luxury, the comfort, the appointments of the space-boat.

"—the former property of one of the highest lords of Shaul! Like his private boudoir! Marvellous, my friend Ike, and the anti-gravity over-powered so that you never know when you leave the ground. . . ."

**H**E left the space-field with a hundred and forty-five thousand marks in assorted notes—yellow, blue and blue-green. He turned his face toward the central part of town, passed

through a district of warehouses, second-hand shops, rooming-houses. Then, climbing a slight rise, he came to the quarter of the restaurants, taverns, bordellos.

Farther up the hill were the concrete and glass hotels, catering to exiles and regular visitors—smugglers, black-birders, ship-stealers, spies. The city was crowded, the streets filled with sauntering men of all races and variants—first-stage types like the Canopes, Maevos, Dyaks, varying in only a few details, then along the metamorphological gamut. The Shauls and Kelons, Ladrillos and Green-Nasoons and then the Alphacrets Eagles, quaint, sharp, bony as herons, the slim Antastans, the fat butter-yellow Loristanese.

Paddy ate a slow meal at an Earth-style restaurant, then crossed the street to a barber shop, where he bought a shave and a haircut. At a clothing store he dressed himself in clean underclothes, a somber blue jumper, soft boots.

The proprietress was an ancient Loristanese woman, whose youthful yellow had darkened to a horse-chestnut color. As Paddy paid, he leaned confidentially across the counter, winked.

"And where might I find a good beauty shop, my knowledgeable charmer?"

The old woman gave him his change and the directions together. "Upstairs and down the hall. The doctor gives you a new face as easy as I change your clothes."

Upstairs walked Paddy, down a long corridor broken by a line of cheap wooden doors, each door bearing a name-plate: Gaffer Stewage—Ghetti Explosive Supply—Protagni and Dha, Loristanese Financial Consultants—Ramesh Singh, Funeral Consultant and Insurance, Corpeus Buried Anywhere—Dr. Ira Tallogg, Dermatologist.

Three hours later Paddy was a different man. His hair was black, his skin a dark olive, his eyes stained black with Optichrome B. No longer was his nose broken. Instead it resembled the nose Paddy had worn during his youth. Even

his fingers had been capped with new prints and his tongue had been slightly stitched, changing his voice and altering the pattern of the surface.

Paddy surveyed the new man in a full-length mirror. Behind him the doctor stood silently—a fat neatly-shaved Barther with a sour expression.

Paddy turned. "How much, doctor?"  
"Five thousand marks."

As Paddy counted out the money it came as a sudden sharp discovery that the doctor was the sole link between the old and the new. He said, "How much for the operation and how much for keeping your mouth shut?"

The doctor said, "All of it either way. I don't talk. I get asked plenty. There's more spies in Elsnor than there is in Novo Mundo. All I need to do is talk once and I'm done. The Blue-nose Gang would get me inside the day."

Paddy studied his new profile. "Would you talk for a million marks and a free ride to Earth?"

The doctor replied warily, "Hard to say. Nobody's ever offered it to me."

Paddy tilted his head, looked down his nose at the farshortened reflection. The doctor connected the red-headed fugitive from Akkhabats and the dark man from nowhere like the equal sign of an equation. As he had pointed out, Elsnor swarmed with spies.

Now if he, Paddy Blackthorn, were the Executive Intelligence on one of the Langry worlds he would station a man at the Elsnor space-field—maybe leaning against the hanger. A man landing a ship with a crystal dome would set many wheels in motion.

They would know he had bought a blue jumper before he appeared again on the streets. They might learn that he had visited the doctor. So far his new appearance was unknown. He was still nameless. So long as he was unknown and nameless he was safe in the crowds of the wardens gray men coming and going.

The doctor was the link. He would be approached, questioned, offered enormous bribes, an all-embracing pardon for past sins.

"Doc," said Paddy gently, "do you have a back door out of here?"

The doctor looked up from putting away his tools. "Fire escape down the rear," he said shortly.

It would be watched, thought Paddy. He eyed the doctor speculatively. He could trust nobody. What was a million, ten million, a hundred million marks, one way or the other, either to himself or the Langtry world? The wealth of the universe, the cycle of empire was clasped to his wrist.

He should kill the doctor. He should but he could not. The doctor read the thought in his eyes, drew back, read the dismissal, relaxed. Others had looked at him with the same expression and for that reason he carried a gun in his pocket.

Paddy went to the window, looked out, into a dark back alley. Across the street was a blank wall, streaked with grime, riddled with a native red fungus.

PADDY felt trapped. They knew where he was. Any minute he could expect a bullet in his head or kidnapping and the nerve-suit—a lifetime in the nerve-suit. His flesh crawled. It was a mistake, landing on Spade-Ace. As soon as he had set foot on the planet, his presence had been reported. Langtry agents would be converging like hounds on a fox.

And yet he had to land sometime, somewhere. Paddy thought of the shrippe in syrup, grime-soaked. No water, no food—Earth would have been little, if any, better. He would have been extradited from Earth almost as soon as he landed and his story laughed off by a bribed magistrate.

He turned back from the window, surveyed the dim little room with its settee and spindly knee-bite-plant, the operating table and racks of instruments, cabinets full of bottles. The walls were cheap spraywood, the ceiling the same.

Paddy turned to the door. "Now I'm going, doc, and never forget—I'll know if you spill and you'll sore regret it."

The doctor seemed to take no offense, having heard the same threat from each of his patients. He nodded matter-of-factly and Paddy took his leave. The door latched behind him.

Paddy looked up and down the empty corridor. It smelled of sour varnish, of coarse fluff of dust. Next door to the doctor was the office of Ramnath Singh, Funeral Consultant. Paddy laid his ear to the glass paneled in the door. It was late in the afternoon. The office seemed to be empty. Paddy tried the door—locked.

Again he looked up and down the corridor. On Earth there would be no hesitation. On Spade-Ace a card cheat was hung head downward, his ankles nailed to a high beam. A burglar was shot on apprehension.

Paddy muttered, "The lure of gold is leading me to the edge of crime." Setting his shoulder to the glass he heaved. The glass bent out of the molding. Paddy reached in, snapped the latch, slid open the door, entered.

The office was a mere cubicle, equipped with a desk, a table displaying miniature coffins and urns at various prices, a small monophot, a bet-screen. On the wall hung a calendar and a group photograph of a family standing in front of a small frame cottage, evidently on Earth.

Paddy crossed the room, put his ear to the partition. On the other side he could hear a scrape of motion—the doctor setting his office to rights.

To Paddy's right was a little closet. He looked in, saw a tank of mist-cleaner, a medicine chest built into the partition. Opening the door of the medicine closet and pulling out Ramnath Singh's various ointments, incenses, lotions, Paddy had only a thin layer of spraywood between himself and the doctor's office.

Now, thought Paddy, we'll see, we'll see. If I've been followed, presently they'll be curious and come on up to see where I am. If they come up and question the doctor I'll know the worst, and be prepared.

He heard voices, bent his ear to the

cabinet. The doctor had a patient—a rough voice like an Amazonian. He was suffering from heat-rash and the doctor gave him a package of sal-negative. Another patient, suffering from toxic burns, was treated.

There was a wait of twenty minutes, then another patient, then another twenty minutes—and now a fresh new voice with a different timbre. Paddy cocked his ear. The voice was feminine, full of soft-voiced gentleness. The woman asked, "Are you Dr. Tallogg?"

There was a pause. Paddy pictured the doctor's slow sour scrutiny. "That's right."

"Dr. Tallogg," said the woman's voice, "you know that your brother, Dr. Clement Tallogg, is looking for you?"

There was a long silence. Finally, in a dim muffled voice, "I have no brother. What do you want?"

"I want to pay you five hundred thousand marks. That's half a million marks." She paused to let the figure sink in, "I want to take you back to Paris. We can leave in fifteen minutes. When we arrive you'll find that your brother is no longer interested in your whereabouts, that a certain set of books has been found, I can arrange all this. All I want in return is some information."

Another long pause and Paddy's eyes narrowed. Sweat poured down his ribs. What temptation to put before a man! Home, wealth, the sweet milk of friendship—how could he resist? He would not resist.

"What kind of information?" came the low dim voice.

"A tall red-haired man, about thirty years old entered the building, came to your office. He has not been seen to leave. Very probably you have altered his appearance, possibly provided him with an unobtrusive route to the streets. What I want is an exact description of this man, his new appearance, his new coordinates and what you know of his future plans."

The silence was of a full minute's duration and Paddy held his breath.

"Show me the money."

There was a soft thud, a click, a snap. "Right there."

"And—the other matters?"

"You'll have to accept my word."

The doctor made a soft sound of successful rejection.

Silence.

"Here," said the doctor, "Swallow this."

Hastation.

"What is it?"

"It's one of the Amazonian ordeal drugs. If an antidote is taken inside of half an hour no harm of any sort will result. If not you will die in some pain. When you put me aboard this boat I'll give you the antidote."

THE woman laughed. "By a curious coincidence I likewise carry with me a quantity of the ordeal poison. If you will take my dose I'll take yours—and we're both protected."

"Fair enough."

There were sounds, a click, another. Then the doctor's voice came, deliberate, slow, detached.

"The red-headed man now is very dark—a Mediterranean type. Here—this is what the prototype looks like. He resembles this very closely. You may keep it. He wears a blue jumper, soft boots. He speaks with a slight accent of some sort—I can't quite place it.

"I know nothing of his past, or his future plans. His fingerprints"—a pause, a rustle of papers—"this is the set I gave him. He left my office about an hour or an hour and a half ago. Where he went I have no idea."

The woman's voice said, "Did you let him out some secret way?"

"No," said the doctor. "There is a door into the cellar and out into the street that no one very much knows about but I did not take him to it. He simply walked out the door and closed it."

The woman said thoughtfully, "He has not been seen to leave."

"Then—" the doctor started. Paddy pulled himself out of the closet, slid open Ramadh Singh's door, slipped out

into the hall, stepped to Dr. Tallogg's door, slid it ajar an inch. The dark waiting room was empty. Voices came from the inner room.

The door slid quietly open. Paddy slipped in like a dark dream.

He had no weapon—he must go carefully. He slipped across the room, saw a shoulder in gray-green fabric, a hip in dark green. On the hip hung a pouch. If she carried a weapon it would be in this pouch.

Paddy stepped through the door, threw an arm around the woman's throat, dipped into her pouch with his right hand. He felt cold glass, fabric, metal. He pulled out an iron gun, pointed it at the doctor.

The doctor had his own weapon in his hand. He held it as if it were very hot, as if he were not sure where to aim it.

Paddy said, "Put down that gun!" in a voice like an iron bell. "Put it down, I say!"

The doctor peered at him with almost comical indecision. Paddy heaved the struggling woman forward, reached, took the gun from Tallogg's numb fingers. He shoved it inside his jumper. The woman sprang clear, turned, faced Paddy, her mouth parted, eyes wide with black wide pupils staring.

"Quiet!" warned Paddy. "I'm a desperate man. I'll shoot if you drive me to it."

"What do you want?" asked Tallogg quietly. He now bore himself with the indifference of a man condemned.

Paddy grinned, a wide toothy grin. "First, doctor, you will conduct me and this lady to the street through your secret way."

The woman stiffened, began to speak, then halted, watching Paddy in frowning calculation.

The doctor said, "Perhaps I will, perhaps I won't." He nodded warily at the iron gun. "You intend to shoot me anyway."

Paddy shrugged. "I won't shoot. We'll sit here and talk. Faith, I'm a great talker. I'll tell you of the Grand Rally at Skibberreen, I'll talk by the hour of Fionn and Diarmuid. Then there's

Miketas and the old harpist." He looked brightly at the doctor. "Now what do you say to that?"

The doctor's mouth had drooped. He said feebly, "I suppose I have nothing by taking you out."

Paddy turned to the woman. "And I'll ask you to take me to your back."

She said, "Now listen to me, Paddy Blackthorn."

He took stock of her. She was younger than he had expected and a great deal smaller. There were few inches more than five feet of her and she was slim to boot. She had a small face, short dark hair clinging close to her head. Except for lustrous dark eyes Paddy thought her rather plain, hardly feminine. His taste was for the long-limbed brown-haired girls of Maave, laughing light-headed girls.

"I hate killing," muttered Paddy. "Lucky for you it is that I harm never as much as a fly unless first it stings me. Now as for you, walk quiet and calm and there'll be no great harm done to you. But mind—no tricks!"

He motioned to the doctor. "Lead."

The doctor said sourly, "Did I understand you to say that you don't intend to shoot me?"

Paddy snorted. "You understand nothing. Get moving."

The doctor spread out his hands helplessly. "I merely wanted to state that if we are to have I wish to take along the antidote to the ordeal poison I gave the young woman. If I don't have here, she won't give me mine."

Paddy said, "Give it to me."

The doctor hesitated, eyeing the girl dubiously.

"If I don't get it I'll sit here till you fall sideways from the poison."

The doctor shuffled to the drawer, tossed Paddy an envelope.

Paddy looked at the girl. "Now yours."

WITHOUT a word she tossed him a vial. The doctor's eyes hungrily followed the arc of the flight, riveted on Paddy's arm as he pocketed the drugs.

"Now move," said Paddy blithely. "You're both under death sentences, like me in the brick jail at Alkabaia. Except I was an honest thief. You two are traitors to your old Mother Earth." He motioned to the doctor. "You first."

The doctor led them along the scum-smelling hall, slowly, hoping for interruption. Paddy said pleasantly, "And if there's trouble, Doc, I'll smash those bottles down on the floor." The doctor's gait lengthened. He opened a narrow door, led them down a flight of damp stones heavy with the musty stink of some nameless Spade-Ace mold.

Two flights down and the stairs opened into the basement below the clothing store, a long low room dug into the ground, lit by antique glow-tubes. Old cases, dusty furniture cast tall black shadows—junk brought across the mindless miles of space to rot and rot in a basement.

Quietly, slyly, they moved through the basement, forming strange silhouettes against the higgledy-piggledy background. Paddy grinned. They didn't dare attack, they didn't dare run. He had them in a double grip with the gun and the poison.

The doctor glanced at his watch. "Fifteen minutes," he said thickly. "Then the antidote does us no more good." He looked at Paddy with hot eyes, waiting for Paddy to answer.

Paddy motioned silently. The doctor turned, stepped up on a bench, heaved at a slanting door. It swung up and out, letting a slender shaft of white light into the basement. The doctor looked

right, left, motioned with a phlegm arm. "Come on up, all's clear."

He stepped on up, the woman followed nimbly and then came Paddy, cautiously. They stood at the bottom of a light well, between two buildings, with a slit two feet wide running out to the street.

Paddy said to the girl, "Where is the space-boat?"

"North of town on the dust-flat."

"Let's go."

They sailed from between the buildings out into a dark street. The doctor turned to the right, led them among the dismal mud huts of the Asmerian quarter. At a square of light he paused, looked at his watch.

"Ten minutes." He turned to Paddy. "Did you hear me? Ten minutes?"

Paddy waved him on. The doctor turned and they continued out into the open country in back of the town—a region of open sewers, fields packed with unwanted refuse from a thousand stolen ships. Here and there stood the shack of some creature with habits too disgusting to be tolerated even by the tolerant men of Eleanor.

They came out on a plain of white volcanic dust, dark-gray in the planet-spangled night of Spade-Ace, and the town of Eleanor was at their backs—a low unsightly blotch spotted with white and yellow lights.

Paddy searched across the field for the dark shape of the boat. He turned a stormy glance at the woman. The doctor peered at his watch. "About a minute . . ."

[Turn page]



*It's a case of the Humanities versus alien efficiency when Spade's emissaries enter the Earth via a trans-galactic back door in **SHADOW ON THE SAND**, a brilliant novel by John D. MacDonald featured in the October issue of our companion science fiction magazine—*

**THRILLING WONDER STORIES**

The woman's voice glinted with triumph. "I have a space-boat. It's not here. It's at the main field. You're bluffing, Paddy Blackthorn. You want my space-boat more than I want my life. Now I'm making the terms. You've got to go along with me or else kill me."

"And kill you I will," growled Paddy, pulling out his gun.

"And kill yourself at the same time. Langtry agents are pouring into Kleanor by the boatload. They know you're here. They'll get you inside of four hours. You can't hide and you can't get away. I'm your only chance. Cooperate with me, and we both win—and Earth wins. Refuse and we both die—and Earth loses because before they kill you they'll get what they want from you."

Paddy stood limp, angry. "Ah, you scheming, hag-woman, you've got me like Cuckoo's nest. You still have the audacity to claim you serve Earth?"

She smiled in the darkness. "You don't believe me? You've never heard of the Earth Agency?"

The doctor whined. "The antidotes! Harry, man, or we'll be dead!"

"Come here," growled Paddy. He grabbed the woman, felt for scars that might be left by an unpetated skin-flap. "No, you're no Shael. And sure you're no Kling, no Hadan. You're not white enough for a Koton—not to mention the eyes—and you're not yellow enough for a Lachtanese. Of course," he growled. "There's little profit in wondering about your race—you might be selling out to any of them."

The woman said, "I work for Earth Agency. It's your last chance. Give me the antidote—or I'll die and you'll die and the Langtry worlds will herd it over the universe for the rest of time. There'll never come another chance like this, Paddy Blackthorn."

"Quick!" cried the doctor. "Quick! I can feel the—"

**P**ADDY contemptuously tossed them the antidotes. "Go on then. Save your miserable lives, and let me be." He turned on his heel, strode off across the powdery dust.

The woman's voice came to his back. "Wait a minute, Paddy Blackthorn. Don't you want to leave Spado-Ace?"

Paddy said no word, paced on, blind with rage.

Her voice came to him. "I have a space-boat!" She came running up beside him, panted, "We'll take the secret of the drive to Earth."

Paddy slowed his stride, halted, looked down into her wide dark eyes. He turned, went back to where the doctor stood fortitously. Paddy grasped the doctor by the shoulders.

"Look now, Tallag. You have your half million that you got selling me out. Buy yourself a boat this very night—this very hour. Leave the planet. If you make it to Earth you can sell the boat and be a rich man. Do you hear?"

"Yes," said Tallag dully. His shoulders hung as if under a yoke.

"Then go," said Paddy. "And if you love old Earth don't return to your office. Don't go there at all."

The doctor muttered something indistinguishable, became a blot in the gray mark. He was gone.

Paddy looked after him. "Better should I have burst a hole in him and so saved us much concern for the future."

The woman said, "Never mind that. Let's go and we'll head for Earth."

"Very well," Paddy sighed. "It's not as I had planned it."

"Be glad you're alive," she said. "Now let's go."

By a back route they walked to the space-field, quietly crossed to her boat at the far end and Paddy looked at the boat doubtfully from end to end.

"These are crowded quarters for the pair of us, I'm thinking. Now maybe a decent respectable girl wouldn't care to—"

She snapped, "Never mind that, Paddy Blackthorn. You keep your distance. I'll keep mine—and my reputation can look after itself."

"Terra," muttered Paddy, "and who'd want to touch such a spit-out and plain to look? Well then—into the boat with you and may the best man of us win."

As she opened the port the beam of



light fell on them. A man's voice said hoarsely, "Just a minute, just a minute."

Paddy put his hand on the girl's back, shoved her in, started after her. "Come back here," said the dark shape and the voice was louder. "I'll shoot!"

Paddy turned, aimed at the light with Dr. Tallogg's gun. His beam struck square. In the splatter of orange and purple flames from the shorted power-pack, Paddy glimpsed the man's face—the narrow-faced narrow-eyed man who had been leaning against the hangar when Paddy dropped down to the space-field. His face was convulsed by pain, surprise, hate, by the shock of the beam. The lump gathered into a red flicker, died—and the dark shape seemed to sleep.

"Quick!" hissed the girl. "There'll be more."

Paddy jumped in. She sealed the port, ran to the pilot's seat, pulled back the power-arm—and the beat rose into the ash-gray sky of Space-Ace.

## CHAPTER V

### The Skunk Can Do

THEY rose from the field into the glare of the night stars strewn around the sky at various distances.

"Watch the field," said the girl, "through the telescope."

Paddy watched. "There's a couple beats taking off."

"Spies." She crouched in the bucket seat, aimed the beat's nose at one of the spots of black space showing between the joints of the sun, planets, planetside. "Here we go."

Paddy jerked forward. "Hey—that's dangerous, woman! There's lots of stuff out there!"

He quieted because already the Thieves' Cluster was far behind. For a second, two seconds, they flew—then she cut off the power. A relay clicked, the space-drive bar snapped back.

Thieves' Cluster was a lambent blot astern.

She turned the nose another direction, repeated the maneuver. Thieves' Cluster was a bright spot. Once again, off at an odd angle—off with the drive and they were coasting out in inter-star isolation.

The girl left the controls, went to the communicator. Paddy watched her suspiciously. "And now what might you be doing?"

"I'm calling the Agency—on coded space-wave." She snapped a switch, tuned down a piercing whistle that rang through the room. She set five dials, and now a voice said: "E A . . . E A . . . E A . . ."

The girl spoke into the mesh. "Fay Bursell, 59268 . . . Fay Bursell, 59268."

A minute passed, the voice changed. "Go ahead, Fay."

"I've got Paddy Blackthorn here in the boat."

"Good work, Fay!" There was exaltation in the voice. "Where are you?"

"Oh—roughly Aries 3560 or 6060. Shall I come home?"

"Lord no, keep away. There's a lot of ships around the system almost none to nose and they're searching every hull that comes near. You'd never make it. But here's what you can do. Have Paddy—"

The voice changed to an ululating howl that jarred their teeth, clawed at their inner ears. "Turn him off!" yelled Paddy. "He's talking nonsense!"

Fay flung the switch. The silence was like knives.

"Jammed," said Fay grimly. "They're on the frequency."

Paddy blinked dubiously. "Did they hear what you said?"

She shook her head. "I don't see how they could. The code is changed every week. And it's easy to jam the message."

Paddy said, "We'd better get out of here fast. They might have us spotted."

Fay threw on the power. She sat silently, face intent, mouth curved down at the corners. Serious creature, thought Paddy. Odd, say—that was her name,

Fay. Paddy decided it suited her.

She said frowning, "There's no place for us to go now. They'll be watching every port."

"If we could only have ducked out of Eleaser without being caught at it," muttered Paddy. "Then they wouldn't have known where I was."

"Unless they caught the doctor. And in any event they wouldn't be taking any chances." She looked at him with eyes half-challenging, half-wistful. "Now—may I see it, this space-drive formula that's making so much trouble for me? Maybe we can broadcast it to Earth on the code frequency—or we can find a dead little world and hide it."

Paddy laughed. "Young lady—Miss Burdell—whatever your name—I have no secret to the space-drive."

"What?" Her eyes burnt even larger in her small face. "Then why all the turmoil? You must have it."

Paddy jawed. "The five Sons treated so one. Not even their successors, the new Sons, know what it is I've got. No one in the universe knows—except me."

"Well, what is it?" she asked crossly. "Or do you intend to be mysterious?"

Paddy said blandly, "No indeed. I'm surely not the type. Well, for one thing, it's not any directions on how to mix up space-drive. It's a key and four little slips of parchment. And all that's on them are a set of addresses."

She stared at him and plain or not, thought Paddy, she had very lovely eyes, bright and intelligent, and her features weren't as pinched as he first thought but almost childlike—delicate. Indeed, thought Paddy, he had seen worse-looking wenches. But this one—she was too pale and set, too serious for his tastes.

"May I see them?" she asked politely.

And why not, thought Paddy. He un-snapped the band.

She stared. "You're carrying them around your wrist?"

"Where else?" demanded Paddy with asperity. "I never intended to be kidnapped and transported by a Black leg of a female."

She took the bits of parchment and

the key. The first was written in the Pharaic script, which Paddy had been unable to read.

SHE scrutinized it and he saw her lips moving. "Och, then you can read that hushin' scribble?"

"Certainly I can read it. It says: 28.3043 degrees north, 130.5995 degrees west. Under the Sacred Sign." She laughed. "It's like a treasure hunt. But why should they write directions down like this?"

Paddy shrugged. "For each other. I gather. In case one of them got killed, then the others would know where the records were hid."

Fay said thoughtfully, "We're not far from Alpharata."

Paddy stared aghast. "They'd draw and quarter me! They'd wear out their nerves-out! They'd—"

She said coolly, "We could be tourists from Earth, making the Lantry Line. Alpharata A, back into Pegasus for Scheel, down Andromeda—Adell, Almach, Mirach. There's thousands of others doing the same thing. A honeymoon couple, that's what we'd be. It's the last place they'd be looking for you. You'd never be safer."

"Not much," said Paddy energetically. "I want to get back to Earth with my life and there I'll sell these bits to whoever wants to buy."

She looked at him disgustedly. "Paddy Blackthorn—I'm running this ship. We settled that once."

"Och," cried Paddy, "it's no source of wonder that you've never married. God pity the man who gets such a witch. No man would have you with your insistent ways."

Fay smiled wryly. "No? Are you so sure, Paddy Blackthorn?"

Paddy said, "Well, it's sure that I, for one, would never have the taste for the black-headed pint of spite that you are. I'd be drinking whiskey to ease my soul by night and by day."

She smiled. "We're both of us suited then. And now—Alpharata A."

From Alpharata A to Alpharata B the stream of boats was like a caravan of

ants—bringing pods, fibers, sheets, crystallized wood, fruit, meal, pollen, oil, plant-pearls, a thousand other products of B's miraculous vegetation to the windy gray world A, returning with agricultural equipment and supplies for the jungle workers.

Into this swarm of space-craft Paddy and Fay merged their boat unnoticed.

They dropped toward the bright side of the planet. Fay asked Paddy, "Ever been here before?"

"No, my travels never brought me this far north. And from the looker of the planet, I'd as lief be back on Akkaba. If it's as dry there at least it's a planet with blue water." Paddy peered at the telescopic projection on the screen. "Now just what right that ocean consist of? Maybe it's mud?"

Fay said, "It's not water. It's something like a gas. It has all the properties of a gas except that it won't mix with air. It's heavier and settles out in the low places like water or fog—and the air floats on top."

"Indeed, now—and is it poison?"

She turned him a side-glance. "If you fall in you smother, because there's no oxygen."

"Then that will be a fine place to leave our boat. And chances being good, we might find it another time."

"We'd better stick to our first plan. We'll be less conspicuous."

"And suppose they recognize Paddy Blackthorn and his black-headed mistress—ah, now, don't take me wrong. That's just what they'd be calling you and no thanks to them either way. But now, supposing they do that and set out after us, then wouldn't it be a fine thing to jump into the ocean and soar off under their long skinny noses?"

She said with a sigh, "We'll compromise. We'll hide it so that it's accessible. But we'll go back to it only if we can't get a regular tourist packet to Hadan. Assuming, of course, that we're successful here."

Paddy went to the chart of the planet. "That location is right on the lip of the cliff—North Cape, it's called, on Kalkhorit Island."

She said doubtfully, "I think your interpolations are slack. I got a point just off the cliff."

Paddy laughed. "Won't that be just like a woman? Her navigation sets us out in the ocean. You'll see that I'm right," he promised her. "We'll find what we're looking for on the edge of the cliff."

She shook her head. "The point's off the edge of the cliff." She glanced at him sideways with raised eyebrows. "What's the matter?"

"You're too authoritative to suit the blood of one of the Kibbeteen Blackthorns. We're a proud clan."

She smiled. "They'll never hear about it unless you tell them. And I'm only giving orders because I'm more efficient and smarter than you are."

"Hush!" cried Paddy. "Now then, you're as vain as the Shael jaffer that did the cute roosts in his head, and an arrogant car he was, and he's still nursing the bruises I gave him. I'll do the same for you, my black-headed miss, if you're not less bothersome with your orders."

She made a mock stoicance. "Lead on, Sultan. Take it from here. You're the boss. Let's see how you handle it."

"Well," Paddy rubbed his chin, "at least we'll talk things over a bit and there won't be those lordly decisions. Here's my idea—we'll drop low over that gas ocean and make for the shore. We'll find a bit of quiet beach near the cliff, we'll drop down, seal our ship, get out and see what's to be done."

"Good enough," said Fay. "Let's go."

THE gas ocean showed a queer rolling surface like slow-boiling water. In color it was the dirty yellow of city smoke and the yellow light of Alpheratz penetrated only a few feet into the depths. From time to time the wind would scoop up a tall yellow tongue, lift it high, blow it over backwards.

Paddy brought the boat down almost to the surface, steered cautiously toward the lavender-blue bulk of Kalkhorit Island. The finger of the North Cape suddenly appeared through the

base with the sharp-cut silhouette of the cliff at the tip.

Paddy changed course and the caps heaved swiftly over them—a rocky tumble of porphyry, pegmatite, granite. He cut the power, the boat drifted close to shore. Below them appeared a small table, rimmed by walls of shadowed gray rock and almost awash in the seethe of brown sea. Paddy dropped the boat into the most secluded corner and five minutes later they stood on the barren windy rock with the ship sealed.

Paddy walked to the edge of the table, peered into the fog below. "Strange stuff," He turned. "Let's go."

They climbed up over the rocks and after a hundred yards scrambling across loose gravel, came out on a well-paved path. Fay clutched Paddy's sleeve.

"A couple of Eagles—there in the rocks. I hope they didn't see us land."

The Eagles hopped solemnly up to the path, man-creatures seven feet tall with leathery hide stretched tight over sharp bones, narrow skulls with jutting noses, little red eyes, foot-long crests of orange hair. They bore pouches bulging with red gelatinous globes like jelly-fish.

Paddy watched them advancing with translucent eyes. "A more curious race was never bred. They'll want to know all about us. Ah, those planets are like cuckoo's eggs in a wren's nest and to think that Earth once spent her best on them."

He nodded to the Eagles. "Good morning, friend Eagles," he said in a spry voice. "And how's your bulb-picking today?"

"Good enough." They looked around the horizon. "Where's the little air-boat?"

"Air-boat? Ah, yes. It flew very swiftly to the east and out of sight in a twinkling."

The Eagles examined Paddy and Fay with sharp interest. "And what are you doing here along the shore?"

"Well now—" began Paddy. Fay interrupted him. "We're tourists walking up to the top of the North Cape. Could you tell us the best way?"

The Eagle motioned. "Just follow the

path. It will lead into the Sunset Road. You're Earthers?" He spat slyly to the side.

"That we are—and as good as the best of you."

"Better," said Fay softly.

"What's your business on Alpheratz A?"

"Oh, but we're fond of your lovely landscape, your marvelous cities. There's never sights like these on old Earth. Truth to tell, we're tourists, out to see the wonders of the universe."

The Eagles made a noise like "Rrrrrrrr." Without further words they both set off down the path, muttering to each other.

Paddy and Fay watching covertly, saw them pause, gesture along the horizon, point toward the rocks. But finally they continued along the path.

Fay said, "They were only a hundred yards from where you insisted on leaving the boat. It's just blind luck they didn't climb the rocks."

Paddy threw up his arms. "Life off women she will never miss the opportunity to crouch at honest error. Lucky the day when I last see her skinny posterior walking away."

Fay's eyebrows rose. "Skinny? It's not either."

"Humph," said Paddy. "You don't get hams from a chicken."

"For my size it's just right," said Fay. "I've even had it pinched—once or twice."

Paddy made a face. "Faith, it's a scolded life you female agents live."

She cocked her head. "Perhaps not so scolded as you might think. And if you've finished deriding my figure and mandering my morals, we'll be off."

Paddy shook his head wonderingly, had no more to say. They turned their backs to the ocean of turbid gas, climbed the path the two Eagles had pointed out.

They gained a rocky meadow, passed a small village. Here they saw a central stobick topped by a whirling-bladed feth, concentric circles of conical houses, a long raised platform for the Pharadic pavanne-like dancing. A dozen Eagles, standing in a solemn group near

a half-unpacked crate of machinery, looked like odd hybrids of man and stick-insect.

FAY said dreamily as they walked, "Isn't it a marvel, Paddy? When man first landed here he was man. In two generations the tall skinny ones predominated, in four the skull formation had begun. And now look at them. And to think that in spite of their appearance they're men. They can breed with true men and the same goes for the Ammasians, the Canopes, the Shreals—"

"Don't forget the Macvites!" cried Paddy enthusiastically. "Ah, them beautiful women!"

"—then there are the Loristanes, the Creepers, the Green-hags—and all the rest of the inbred overmen. It's truly wonderful how the planetary influence acts."

Paddy snorted. "Earth populated them and a hundred years later they come returning like cures to spite their grandmothers."

Fay laughed. "We shouldn't be too arrogant, Paddy. It was the same differentiation and specialization that split the original simian stock into gorilla, chimpanzee, orangutans, a dozen types of submen,—finally the true Cro-Magnons."

"The situation has backfired now, Paddy. Today we're the root-stock, and all these splits and changes brought about by the differences in light, food, atmosphere, gravity—they may produce a race as much better than men as men were superior to the proto-simians."

Paddy snorted. "That I'll believe when—"

"Consider," said Fay seriously. "The Shreals can do complex mathematical operations in their heads. In a contest for survival that depended on mathematical ability they'd win. The Loristanes are physically keen. They can telepathize to some extent, and they're subtle in person-to-person dealings. They're the merchants of the universe and wanders at group enterprises."

"Those Eagles here—their curiosity is insatiable and they're so naturally

persistent that there's no word for the quality in their language. Any more than the Earthers have a word for the will to live."

"Men will shrug off a problem or a task but the Eagles will work till they've accomplished what they've started. The Ammasians have that pious pleasure-lobe. It doesn't give them much survival value but how they enjoy their lives! Sometimes I wish I were an Ammasian."

Paddy said contemptuously. "I've heard all of that in grade school. The Ketons are the ruthless chess-players, the daring ones, the soldiers. I think of them as the devils that figured out the most horrible tortures. Then there's the Canopes, that live together like bees. What of it? None of them have a little of everything like the Earthers."

Fay said seriously. "That's by our standards. We're taking ourselves as the base of comparison. By the standards of these other races we're at one extreme or another."

Paddy grunted. "Better that old Sam Langtry had smothered in his cradle. Look at the mess and jumble, men of all varieties. It was so simple before."

Fay tilted her head back, laughed. "Don't be silly, Paddy. Human history has always been a series—a cycle of differentiation, then the mingling of the surviving stock back to uniformity. Right now we're going through the cycle of differentiation."

"And may the best man win," said Paddy sourly.

"So far," said Fay, "we're not winning."

Paddy shoved out his head, cracked his elbows. "Well, they want and tied up the space-drive on us. That's like blind-folding a man before he gets in a free-for-all. Give us Earthers an even track at it—we'd have 'em backed to the boards, crying and pleading for mercy. What a joke! It was an Earther that discovered the gadget and gave them their lives."

"Accident," said Fay, licking at a goblet. "Langtry was only trying to ac-

celebrate masses in a tungsten cylinder."

"That's the man who's responsible for all this trouble!" cried Paddy. "Langtry! If I had the spoon here I'd give him a piece of my mind."

"I would too," said Fay. "But mostly for giving the secret to his five sons instead of the Earth Parliament."

"Well—the five sons, then. Greedy devils, they're the ones I'd rail at. What did they need, each with a planet to himself?"

Fay made a careless gesture. "Love of power. The empire-building instinct. Or bad blood. Call it anything you like. They left Earth for the stars and settled along the Langtry line, each to a world, and set themselves up in the business of selling space-drives to the homeworld. Their descendants got the secret, no one else. I suppose nobody would be more surprised than old Sam Langtry at the way things have turned out."

"If I had him here, you know what I'd be doing with him!"

"Yes—you told me. You'd be giving him a piece of your mind."

"Ah, you're mocking me now. But no, I'd send him back to guard our boat. And we'd beat his bones raw if divil an Eagle laid a finger on the polish."

Fay looked up the ridge ahead. "You'd better be saving your breath for the climbing."

## CHAPTER VI

### *The Girls of Maere*

THE road bent up toward North Peak in a gradually steepening rise. Below and to their right spread the sea of dull gas, out as far as the eye could reach. Back along the shore the whirling fetishes of a thousand little villages flashed in the yellow light of Alpharatz. To the left, around the neck of the cape, was Sargha, a city built on the same general plan as the villages. There was a central obelisk, surround-

ing circles of buildings.

Fay clutched Paddy's arm. "Look! See there—maybe you're right after all. . . ."

It was a splendid trestle of steel, crowned with a whirling fetish, on the very lips of the cliff.

"Those things are sacred to something or somebody. We'll have to look for a Sacred Sign."

Standing around the edge of the cliff was a group of Eagles, males with scarlet or orange-dyed crests, females with greens and blues, all wearing the same black-brown sheath of fabric that covered their bony bodies from breast to knee, the same flat shoes.

"Tourists," whispered Fay. "We'll have to wait till they leave."

"Naturally," said Paddy.

For twenty minutes they waited, looking out over the vast spread of view, cycling the Eagles sidelong.

A voice spoke at their elbow. An Eagle had stepped up beside them unnoticed. Paddy's Adam's apple twitched. The Eagle wore the official medallion of the Phœnic government.

"Tourists?" asked the Eagle.

"We're joring every minute of it," said Fay enthusiastically. "The view is marvelous! The city is beautiful. . . ."

The Eagle nodded. "It is indeed. This is one of our finest spectacles. Even the Reverend Son of Langtry himself ascends from time to time to take the north air."

Fay glanced at Paddy significantly. Paddy raised one eyebrow. Evidently the death of the five Sons had not been announced to the universe at large. The Eagle was saying, "And when you get down to Sargha be sure to take the deep-sea tour and see the strange sights under the gas. Have you been on the planet long?"

"Not too long. But we've lost track of time," she added coyly. "You see, we're on our honeymoon. But we couldn't resist coming to see Alpharatz A."

The Eagle nodded sagely. "Wise—very wise. We have a world from which much may be learned." And he stalked on.

Paddy spat. "Damned meddlers. It's hard to know when their curiosity is official and when it's just curiosity."

"Sh," said Fay. "They're blarneying."

Three minutes later the top of the peak was bare to the sweep of the wind.

"Now," said Fay. "A Sacred Sign—where is it? And how do we know it's sacred when we see it?"

Paddy vaulted up on the base of the trestle, glanced appraisingly up at the splashing veins of orange and blue and red. "That whirlymorgie must be it."

He scrambled up like a monkey until he came under the sweeping blades. He reached up, wrangled down the whole tangle of fiber, metal and feathers.

Fay yulled. "You fool! They can see that from below!"

Paddy said, "I had to if I wanted to see what was under."

"Well—what is under?"

"Nothing," Paddy said uncomfortably.

"Get down then for heavens sake. The riot squad will be here in five minutes."

They walked briskly down the slope. Hardly had they gone a hundred yards when Fay put out her hand. "Listen!"

A fierce anxious sound, still faint—*Swoosh—swoosh—swoosh*. Far below a pair of motorcycles turned into the road, started up the grade. The sound grew louder, keening, whining. It stopped short. A moment later two Eagles, each with official medallion on his uniform, roared to a halt beside them.

One alighted. "Who caused the destruction? He who is guilty will receive the severest of treatments."

Fay said in a worried voice, "We're not guilty. It was a party of Kolens and they went down the other way, I think."

"There is no other way."

"Ah, but they were wearing sky-shoes," said Paddy hopefully.

"They were drunk, the scoundrels," said Fay.

The Eagle officials inspected them skeptically. Paddy sighed, cracked his knuckles behind his back. He speculated about the Pharoah jails. Were they

more comfortable, he wondered, than the old brick fort at Akhabala?

The chief of the Eagles said to the subordinate, "I'll continue to the top. You wait here. We will prosecute them guilty until I find otherwise."

He twisted power on his motorcycle, continued up the hill.

"We're in the soup, Paddy," said Fay in Earth-talk. "I'll distract his attention. We want that motor-bike."

Paddy stared at her, aghast. "It's a long chance."

"Of course is it," she snapped. "It's our only chance. We've got to get away. If they arrest us, march us in, check our psychographs . . ."

Paddy grinned. "Very well."

FAY stopped around in front of the wheel. The Eagle blew his cheeks out, pulled back his narrow head.

"Close him, Paddy," yelled Fay.

The Eagle turned his head just in time to meet Paddy's fist. In a great thrash of richety arms and legs the Eagle sprawled over backwards into the road.

"Now we've really done it," said Paddy ruefully. "It's long years picking cactus for this."

"Shut up—jump on that bike. Let's get moving," panted Fay.

"I don't know how to run the thing," Paddy grumbled.

"Run it! We'll coast! Let's go!"

Paddy threw his leg over the narrow seat and Fay jumped on behind. He turned it downhill, threw levers till he found the brake. With a lurch the motorcycle started.

"Whee!" yelled Fay in Paddy's ear. "This is like the roller coaster at Saint-Cruz."

Paddy stared big-eyed down the hill and the wind whipped water from his eyes.

"I don't know how to stop her!" yelled Paddy. "I can't remember where the brake is!" The rush of wind tore the words from his lips. He pulled frantically at unfamiliar knobs, levers, handles and at last chanced on a pedal that seemed to have some effect.

"Watch that side-road," screamed Fay in his ear. "It goes down to the city!"

Paddy leaned and the motorcycle screeched around a party of pedestrians, who shouted raucous insults at their backs. And now to Paddy's horror the brake pedal had lost its effect.

"Slow down, Paddy," cried Fay. "For heaven's sake, you reckless fool—"

"I wish I could," grumbled Paddy. "It's my dearest wish."

"Throw in the drive!" She leaned past him, pointed. "There—try that knob!"

Paddy pulled the lever a notch toward him. There was a loud whine and the motorcycle slowed so rapidly as almost to toss them off. It wobbled to a halt. Paddy put out his leg.

"Get off," hissed Fay. "There's that little path, and right over that ridge of rock is our boat."

*Swoosh-swoosh-swoosh!* From far above them a nerve-tingling sound, urgent and shrill.

"Here comes the other," said Paddy. "Sweeping like a panther."

"Run," said Fay. "Over the ridge. We're got to get to our ship and fast." *SWEEEEE-EEEE-EEEEEE!*

"Too late," said Paddy. "He'd shoot us while we run. Come here with me. Watch this now."

He pulled her off the road, down behind a rock.

The sound of the motor increased in volume but dropped in pitch as the officer approached slowly, cautiously. He tripped past the boulder.

"Jeez!" yelled Paddy, jumping out. The Eagle squawked. Paddy leaved at the handle bars, the motorcycle left the path, bounded, humped down a steep ravine. The last they saw was the Eagle frantically trying to steer the machine around outcrops and boulders, his great torso, elbows wide, legs splayed out into the air.

There was a crash, then silence.

Paddy sighed. Fay said, "You're got so smart. You wouldn't believe me when I said the point was not on the cliff but at the base."

Paddy was disposed to argue. "How

could it be? There was the Sacred Sign just at the sheet said."

"Nonsense," said Fay. "You'll see."

Their boat had not been touched. They crowded in, sealed the port. Fay climbed into the pilot's seat. "You keep watch."

She lifted the boat, slid it off the table, let it sink under the gas, which showed luminous yellow through the observation window.

"The color is from suspended dust," said Fay off-handedly. "The gas is dense and the dust seeks the level of its own specific gravity and there it floats forever. A little deeper the gas will be clear—or so I've been told."

"What's the composition of the gas?" asked Paddy. "Or is it known?"

"It's neon kryptosite."

"That's a strange pairing," remarked Paddy.

"It's a strange gas," replied Fay lightly.

Now she let the boat fall. The sun-drenched dust disappeared and they found themselves looking out at a marvelous new landscape. It was like nothing else either had seen before, like nothing imagined.

The yellow light of Alpharain was toned to an old gold suffusion, a tawny light that changed the landscape below to an unreal hazy fairyland. Underneath them was a great valley with hills and dales fading off into golden mists. To the left loomed the great cliff of Kolchovik Island, rising up and out of sight above. Fay followed the cliff till it jutted out, fell back.

"There's North Cape," she said. "And there on the little plateau—that's exactly the right spot."

Paddy said in a subdued voice, "Yes, by all that's holy, you seem to be right for once."

"Look," said Fay. "See that thing like a sundial? That's what we want."

Paddy said dubiously, "How're we to get it?"

She said angrily, "In your space-suit, of course! And hurry! They'll be after us any minute."

Paddy gleefully let himself out



through the space-lock, stalked across the plateau. Bathed in the eerie golden light he advanced on the pedestal. On its face was inscribed a red and gold pentagram.

He tried to lift—nothing happened. He pushed, felt a quiver, a wrench. He put his shoulder down, heaved. The pedestal fell over. In a little lead-lined cavity was a brass cylinder.

**P**ADDY lay below, an opulent blue-green planet with a thick blanket of atmosphere.

Paddy pinched Fay's calves, felt her thighs. She jerked, turned to him a startled glance.

"Now, now—I was merely testing to see if you might be fit to walk on the planet," explained Paddy. "You'll be monstrous heavy, you know."

Fay laughed ruefully. "I thought for a moment you were making love Skibbereen-style."

Paddy screwed up his features. "You're not my type. It's the cow-girls of Muxva for me with all their upstairs. Now—as I've just discovered—you've hardly enough flesh to keep the air away from your bones. You're so pale and peaked. No, for some you might do but not for Paddy Blackthorn."

But he was smiling and she laughed back and Paddy said, "In truth, sometimes when you've got that devil's gleam in your eye and you're showing your teeth in a grin, you're almost pretty in a peckish sort of way."

"Thank you very much. Enough of the blarney. Where are we going?"

"It's a place called the Kamboregian Arraunstead."

"And where's that, I wonder?"

Paddy studied the charts. "There's no mention of it here. It sounds like an inn or hotel or something of the sort. Once we land we'll be able to find out for sure. And you'll be frightful tired, for the gravity's strong as a bull here."

"I'm not worried about the gravity," said Fay. "I'm worried whether or not the Badoon police have received our description yet."

Paddy pursed his lips. "Badoon's a

popular place with Earthier tourists, gravity or none. Though why they come surpasses my understanding, since it's nothing but insects and slights and arrogances they get from the Hunks, the conceited omnisciences."

"It's a very beautiful planet," mused Fay. "So gentle and green-looking with those million little lakes and rolling valleys."

"There's no mountains," said Paddy, "because the water tears them down as fast as they're pushed up."

"What do you call that?" Fay pointed to a tremendous palisade flung across the countryside.

"Ah, that's a big segment of land being pulled down," said Paddy. "With so much gravity there's these great movements of the crust and these great cliffs. The Badoon build dams across all the waterfalls and make use of the power. Then the water doesn't fear a great gully into the land."

"Land, land, land," said Fay. "That first Rod of Langtry was a glutton for land."

"And the Langtry clan still owns all Badoon. It's a feudalism or so it says in the book. Langtry's own the big estates, rent out to lesser noblemen, who rent out again, and sometimes there's another subletting and another until it's the little farmer that's supporting them all."

"And marvelous crops they grow here, Fay. The finest fruits and vegetables—all Earth imports, since the original growth was rank poison. And the plants have changed as much as the men when they came to be Badoon."

Paddy looked at Fay earnestly. "This is Mary's own truth now I'm telling you and as I'm Patrick Delaney Blackthorn I've been here before and I know the country. You won't believe it when you see oranges growing on vines and them as big as pumpkins."

"And they grow a wheat that comes in heads the size of my foot, low to the ground, with a pair of leaves like lily-pads. They're got grapes now with a brittle end that you knock off and a gallon of wine pours out. They're marvelous good botanists, these Badoon."

FAY was studying the chart. "There's Stettavold—that's the largest city. A clearing-house for export and import, it says. We could land there and maybe have our best vapor-plated. A nice dull green instead of this garishmetal. I don't think we'll be conspicuous."

Paddy squinted down at the wide bright face of Radex. "There's such a lot of little boats flipping in and out of here that an Earther would hardly believe it, not knowing the secrets of Langtry's sons. One little space-boat the more or the less will hardly be looked at."

"They might think it strange for Earthers to own a space-boat. Not many do. Mostly they come by the passenger packets."

Paddy rubbed his chin. "If we land at Outer Skat Field about dusk—there's no control or examination there—we should be able to walk into Stettavold without question."

"It's about dusk now at Stettavold," said Fay. "There's the field, so let's set down before they send a warhead up after us."

Outer Skat Field lay behind the warehouses and packing sheds which lined the main field. It was a wide irregular space, undeveloped, used by private owners, small traders. There was no control tower, no radar beam, and when Paddy and Fay climbed out into the warm dusk no eye turned to look after them.

Paddy took a few steps, turned to watch Fay walking toward him—slowly as if she were wearing a heavy knapsack. He grinned.

"Bad will be the first thing you ever felt, young lady. Your knees will be like oiled hinges and your feet will ache as if they'd been trod by a horse. But in a day or so you'll not notice so much. And if you stayed here a while your neck would swell and your sons would grow up short and tough and rabby and your grandsons would be Hunka as coarse and ugly as the best of 'em."

Fay shifted. "Not if I have the picking, as I intend, of their father." She stared around the luminous blue-green

sky. "Where's the town from here, Mr. Radexer?"

Paddy gestured toward a grove of low heavy-trunked trees at the edge of the field. "If memory serves me there's a tube station in this direction. We'll take us to the heart of the town."

Painfully they walked to the concrete ramp which led down to a pair of metal doors. Paddy pressed twice. A moment later the doors snapped back and they entered a little car with two seats.

The doors slid shut, there was a sense of rapid motion. A moment later the doors opened to the sounds of the city.

Fay looked at Paddy. "Free? Doesn't someone make us pay?"

Paddy said, "All the utilities were put in by the Langtry family. They're so wealthy that they don't need our miserly coin. Notions office. We're on the biggest family estate in the universe."

They stepped out on a broad street lined with low heavy buildings, all with plate-glass fronts on the lower levels. Fay read a legend on the portico of a long arcade. "Stettavold Inn—that sounds good. Let's get ourselves a bath and some fresh food."

"Nah!" Paddy laughed. "That's not for the likes of us, young lady. We're Earthers. They'd not let us past the doors."

Fay stared incredulously. "Do you mean that they wouldn't serve us merely because we're—?"

Paddy nodded. "That's right. The Earther keeps his place on Radex."

Fay turned away. "I'm too tired to argue. Let's go to the Earther hotel."

## CHAPTER VII

### NEAR THE DOCK

THE Kambergian Arrowhead? The dock-clerk, a sour-visaged Radex, told them it was a resort on the shores of the Bath Lake. To Fay's dilapidated inquiry he smirked wryly.

"Earthers at the Kambergian?"

They'd as soon serve a run of hard-luck. You must understand the quality of Badau take their pleasure at the Kamboregian. It's where the Sun himself goes. Everything must be quiet and elegant."

Paddy nodded. "Ah—then we miserable Earthers would be out of place indeed."

Fay asked desperately. "Don't Earthers go there at all?"

"Only as scullions or entertainers. The Eyeville Ramblers, a trio of acrobats, just returned from an engagement and were well satisfied with their treatment."

"Hum." Paddy rubbed his chin. "How does one get these engagements?"

The clerk turned away. "Oh—through the amusement syndicate, I suppose."

Paddy turned to Fay. "Now young lady, can you dance, sing, mimic, eat fire or turn handspirings?"

Fay said, "I'm no acrobat, not in this gravity. I suppose I could play a comb or recite Gunga Inn with gestures."

"I'm a magician," said Paddy. "I perform card tricks that'll mystify them, especially if they're drunk as they're apt to be. We'll be the finest act ever brought on the floor. At least we'll be allowed on the premises."

The Kamboregian Arrowhead was a block of concrete five stories high and a quarter mile long, ornamented with a profusion of gold quincunxes, quatre-folles, fleur-de-lis. Alternate sections were stained pink and light green and the overhanging pediment was light blue.

Lath Lake, rippling, twinkling very swiftly to the strong gravity, half encircled the building and the formal gardens. Beyond, the land fell away in a vast sweep of rolling turf up to a mile-high cliff, rising horizon to horizon.

The air of wealth and opulence clung to the hotel. It glistened with crystal paces and bright metal. The canopies glowed like satin. Oval shell-like pleasure boats rode the lake, moving under small square sails.

Paddy and Fay discreetly went to the rear, entered a waiting room, wait-

ed their business to a tired-looking Armenian porter, who brought them to the Chief Steward in a brightly lit office.

The Chief Steward was short and fat even for a Badau. His Jewish hang like the wattles on a chicken. His eyes were deep-set and clever.

Paddy said, "The gentleman at the Amusement Syndicate sent us up here to see you. We're Black and Black, Entertainers Extraordinary."

The steward looked them up, down, ran his eyes over Fay's figure. Like some of the other planetary races the Badaus found Earther women attractive. "Did not the Syndicate give you a card for me?"

"Ah, we lost it," said Paddy. "The wind blew it clean out of my hands and away in a twinkling. However the Syndicate was much pleased with us and said to say a kind word to you for him."

"What do you do?"

"I'm a magician," said Paddy. "I'm an accomplished prestidigitator and objects come and go at my command. I change water into purple vapor and then to a swarm of frogs and they melt into a big flash of light. But my specialty is with the cards. I make the ace of spades jump out of the deck and how from the waist, and there's a trick I know with the kings and queens that'll have 'em giggling for months to come."

"Then there's my wife here. She's the cleverest thing alive. She's great. She'll have them agog with their eyes so you could knock them off with sticks. Sure, they'll clap your back for giving them such rare enjoyment."

The steward blinked. "Well—the betting is complete. I'll give you a try and if you're so good as you say I'll let another team go that's not doing so well."

"Good," said Paddy. "A change is all we want. We'll be sleeping in the hotel tonight then?"

"Yes, this way. I'll show you to the entertainers' barracks. I'll have to separate you."

"Ah, no!" cried Paddy.

"Sorry—it's the rules of the establishment."

Paddy found himself in a long hall,

lined with tube full of sleep-foam and small stools opposite. The steward assigned him a section and said, "You will be fed from a chow cart in half an hour. When it's time for your act, about the fourteenth phase, you will be summoned."

"Until then, you can rest or rehearse as you wish. The practice room is through that door. There is to be no loud talking, no quarrelling, no alcohol or narcotics. Under no circumstances are Earthers permitted to wander on the grounds."

"Faith," muttered Paddy, "I hope you'll let me use the bathroom."

"What's that? What's that?"

"I was inquiring about my wife," said Paddy smoothly. "When do I see her?"

"The recreation hall is open tomorrow. Until then she'll be well enough." He departed, a little ball of hard brown flesh in an embroidered surcoat.

**PADDY** looked up and down the bar-a racks. A few of the sleeping tube held the bodies of low-caste Shwala. Assassins; Canopes, the long-limbed Hoptenthroids of New Heflaa, a few other Earthers.

In the tub next to him lay a Labrite from Deech Ten, a small mottled antherpoid with arms like lengths of cable and flabby hands. He was watching Paddy with blind-looking eyes.

"What's your act, Earther?" he asked in the Badaic language.

"I'm a magician," replied Paddy morosely.

"A good one, it is to be presumed?"

"The best. Plamas—lore of the little folk..." Paddy's voice died to a mutter.

"You'd better be good," said the Labrite. "A night or so ago they saw through a magician's tricks and they threw food at him."

Paddy raised his eyebrows. "Are they then so tricky, these Hunkis?"

The Labrite said, "Indeed they are. Never forget, here is the cream of Badaa, only the Langtry clan and maybe one or two of the highest lords otherwise. There's a convention on, now and

they're more than usually excitable, vehement, abrupt. And if they choose to stick you with one of their poniards no one would think twice about it."

"Whisha, whishi!" muttered Paddy. "And me with my cat's cradle tricks." Aloud he said, "And where might Suite Ten be?"

The Labrite squelched his prunedlike eyes away. "I don't know. One of the porters will tell you, if it's stealing you plan don't get caught."

"Indeed, no stealing," said Paddy. "In Suite Ten is an old friend I'm looking for."

The Labrite stared. "One of the Badaa Langtrys tried to an Earther? Well, I suppose stranger things have happened. Did you save his life?"

Paddy made an absent-minded answer, lay back thinking. Any entrance to Suite 10 must be made very soon, because after one performance there would be no further opportunity. He pictured himself dodging food scraps, ejected from the hotel with curses and insults.

He rose to his feet, set off down the hall. He turned into a corridor with stone walls like a dungeon, lit by a light tube along the top. He came to an open archway, looked through, saw a counter, a wicket, stores of material and behind them a Canope clerk.

Paddy advanced with a swagger and said, "I'm the new porter. The Chief Steward told me to get my outfit here."

The Canope clerk wheeled, rose to his feet, reached into a bin, tossed a white bumper on the counter, opened a drawer, pulled out white gloves and a mask-like inkster. "They don't like the air we breathe, Earther. Wear the mask over your mouth and nose at all times. Here's your cap, your sandals, your cleaning kit. Good luck and stop lively."

"Indeed I will and I'm forever grateful to you. Where may Suite Ten be found?"

"Suite Ten? The steward assigns you to Suite Ten on your first day? Strange. That's the Boer's private library and very huffy-duffy too. Go out the door there, turn to the right along the corridor with the rose quartz floor and so

on till you come to a statue of the Badon Langtry.

"If there's anyone within do not enter, because they're mighty secret and inescapable at this time and they don't like Earthers. For some reason they're merciless to the Earthers."

I could tell you why, thought Paddy. He hastily donned the porter's garments, set off down the corridor.

A narrow door took him from dingy stone into a world of exquisite delicacy and sparkle. The Badans were clever craftsmen with a love of intricate design and the great hall was walled with a mosaic of rare minerals—jade, lapis, sparkling yellow walkonite, red chert, jasper, carnelian. The floor was slatted with bands of rose quartz and an oily black obsidian.

He passed a line of arches opening into a high lobby suffusing in a greenish-yellow light. Sitting among clumps of vegetation were groups of the Badans, conversing, sipping wine or inhaling stimulating concoctions from tubes.

Paddy moved along with as little ostentation as possible and the gravity helped provide him with a servile crouch. Ahead he saw a statue, a Badan in an heroic posture.

"Ha," said Paddy angrily, "they don't even admit any more that Sam Langtry was an Earther. Now look at Sam Langtry's own son, as true an Earther as Paddy Blackthorne himself, and look how they show him, a crouched-up wretch of a Badan."

Near the statue was a high door of carved rosewood. Paddy glanced quickly up and down the hall—no one was close. He put his ear to the door—no sound. He stretched out his hand to the latch-bottom. Behind came a scrape and the door snapped back. Paddy bowed, sidled to one side, stooped, pretended to be picking up a spot of dust.

THE Badan stepped out, paused. A turned a long glance down at Paddy. Another followed him out of the room.

"Spice, spice everywhere," said the

first in a bitter voice. "A man can hardly go far a mile on the lake without some Earther pushing his head up from the water." He turned away. Paddy sighed, watched the broad muscular back with a lump feeling in his knees.

The Badan's voice came back to him. "They're like rodents. Everywhere. Indefatigable. To think that one of them . . . If there were only means to apprehend—" His voice became an indistinct mutter.

Paddy grimaced, eased the muscles at the corner of his mouth, pushed open the door. The first chamber of Suite 19 was empty. It was a large library, with shelves of books running up the walls. A great oval table occupied the center of the room and at the end stood a small screen and file for microfilm. An arch opened into chambers beyond but here was his destination.

He glanced around the walls. Books, books, books—thousands of them, with a subtle air of disuse. He could not inspect each one separately. Where was the catalogue? There, a small case beside the microfilm viewer. He pulled it open, fumbled through his mind for the Badan alphabet.

The Foolish Man's Inclination. There it was. Block Five, Shelf Twelve.

Paddy looked along the shelves, found Block Five in a far corner. Shelf Twelve was at the top.

How to get up? He spied a ladder running on a bronze track across the room, and pushed it around to Block Five. He climbed up to Shelf Twelve, ran his eye down the titles.

*The Complete Philosophy of Kobane Binked . . . Archaeological Studies at Zuhair . . . Relation of Planetary Environment to Housing Mader . . . A Scientist Looks at Aquilon Diph-coores . . . Neophanes . . . Botanical Dictionary . . . The Foolish Man's Inclination.*

Paddy drew it from its place, tucked it in the pouch which held his cleaning equipment. A voice from below said, "Porter. Come down here."

The words were like chords. Paddy nearly fell from the ladder, bumped his head on the shelf as he looked down.

The same two Radans that had surprised him at the door stood looking up. He noticed on the chest of the foremost the medallion of a Councillor to the Son.

"Porter. Come down here."

Paddy descended the ladder. "Yes indeed, your lordship."

The small yellow eyes bored into his. "What were you doing up there?"

"Dusting the books, your lordship."

"There's no dust here. These books are sacred, forbidden to your touch."

"Well, I thought I'd better make sure. I didn't want your lordships sending for my neglect."

"What book did you take from the shelf?"

"Book, sir?"

"Give it to me."

Paddy twitched, leaned forward, leaned back. Two Radans—short but burly, hardened to the gravity of the planet, while he was under the strain of the added weight. They could handle him as easily as he might best a six-year-old child.

"Oh, the book! Well, your lordships, it was just a bit of reading for my spare time. Thanking you for your attention, but I'd better be about my duties or the steward will be calling me to account."

Paddy started to slide away. Two arms seized him, the book was taken from his pouch.

The Radan glanced at the title. "The Feeling Man's Inclination"—well-selected, I must say. Humm." He looked back at Paddy. "Strange interests for a porter. And you can read Radals?"

"It was a whim of the moment, sir, and I but meant to look at the pictures."

The second Radan said, "Better call Intelligence, have them put the man through investigation."

The Councillor hesitated. "They're occupied with that off-planet business, all working for the reward." He grunted. "Now it's a million marks a year for life, amnesty for all crimes past and future. If it gets much better I'll be out looking for the fellow myself."

He released Paddy. "I suppose an Earthier stealing a book is no world-shaking event."

The Councillor showed Paddy roughly toward the door. "See that you rided your duties."

Paddy said, "Please may I have the book, your lordship?"

The Radan's face became rigid with sudden rage. Paddy ran off as nimbly as the gravity would permit. As he left the room he caught a glimpse of the Radan, glancing at the book curiously.

**I**N fury, fear, frustration, Paddy returned to the servants' quarters. He defied the porter's garb, found his way to the barracks. The Chief Steward was standing by his sleep-tub.

"So there you are! This way, hurry! There's been an opening and I'll put you on now. Get your equipment."

"Just a deck of cards," said Paddy wearily. How would he tell Fay? She, who depended on his resource and cleverness . . . They must leave. If the Councillor came to page 10 he'd call for the Chief Steward, and inquire about the strangely literate porter.

Paddy said to the Steward, "I think I'd better see my wife a moment."

"Get on there!" screeched the Steward. "Before I cudgel you! You'll see your wife at the proper time."

The exit was barred. Paddy despairingly followed the steward. Any minute now the furor would ring out. Ah well, shrugged Paddy, death came to all men. Perhaps the Councillor had merely replaced the book.

More hopefully he followed the Steward up a ramp into an antechamber off the performance platform. The Steward turned him over to a Radan in a red and green tunic. "Here he is—the magician. I've had to search the entire building for him."

The Radan in uniform inspected Paddy sharply. "Where's your equipment?"

"Just let me have a deck of cards," said Paddy. "That's all I need for now."

"On that shelf then. Now attend carefully. You're on after the present act. Step up on the stage, bow to the diners. See that your humor, if you make use of such, is of a refined nature, the Lords are all their eating. Bow when you leave

the stage. Conduct yourself with the utmost respect. This is not some greasy tavern on Earth."

Paddy nodded, went to stand by the entrance to the stage, where an Eastern woman was performing an exotic dance. Music came from a band of men around the stage, the music of a climate as warm and enchanting as the dancer.

The Eastern audience was attentive, watchful. Damned wily, thought Paddy, and turned his own attention to the dancer, a writhing, posturing slow gyration. The girl wore a gilded G-string over hips slender but ripe, a shoulder blade of gauze, a high parodicalike head-dress. She was sinuous as running water. Her movements were pulse-stirring promises of joy.

The music waxed, waned, became melodious, piquant, soft, increased to beat toward a climax. The dancer followed like shadows after a cloud. Twice of arms, heave of smooth lithe torso, twist of round legs, collapse in a curler and off the stage.

"Phase," said Paddy, eyes glittering. "There'd be a good shipmate for me and I'd even forget the Maave women."

"The Magician Black unveils the ancient arcana and the mysteries of Earth," said a voice to the audience.

"Go on," said the stage manager. "Perform. Make it good."

Paddy huffed, looked up like a skittish horse. The time had come. This was reality. There was a room full of Indian lords to be entertained. They were dull, unsympathetic, hostile. Of course he could jolly them a bit, get them in a good humor.

The stage manager jostled him forward. "Go on, get out there," he said. "And don't forget my instructions."

Paddy felt naked on the stage. "Ladies and gentlemen, now you're to see marvels such as you've never suspected. So sit tight. I have here a deck of fifty-two cards—the oldest playing device known to man, older than the chess-board. And I'm proud to say there's none that's more a master of the pack than me, Harry Black, the Miracle Magician of the Age."

Behind his back he covertly split the deck. "Now I'll read you the cards in a way you'll talk about for years to come."

He held the cards before his face. "This first one doesn't count. I only want to show you the deck." Behind his back, out again, "Now this is the jack of spades—tray of clubs—five of diamonds—" The audience seemed apathetic. He heard a muffled hiss.

"Enough of that, you say? Very well then, 'twas only a warm-up. Now here's the jumping ace. Just a minute, I'll turn my back on you to count the cards. Now, see here, that's the ace of clubs, the ace of spades and in the middle the ace of diamonds. You can tell by the point.

"Now see—I put one on top, one in the middle, one on the bottom, I cut the cards. That's mixing them thoroughly. Now we look through the deck and there! What do we see? They're all together again!"

See . . . see . . . !

"And now," said Paddy genially, "if some kind gentlemen would come forward, take a card. . . . Please, someone? . . . Someone to draw a card? . . . All a little bashful, eh? . . . Very well, then, I'll draw one myself but it's you that'll see it and not Harry Black.

"Ah, and this little item it is—can you all see it now?—and I put it on the bottom and now I'll cut the cards, thus burying the card inextricably in the deck. And now here we go, Harry Black, with his trained glance, looks along the faces and with his eyefight beam as the fox of the Wicklow he spots the card and whisks! It's the nine of hearts! And isn't that a marvel now?"

Paddy ducked. It was the rind of a fruit buzzing past his ears. Paddy bowed. "Thank you, ladies and gentlemen, that'll be all for now."

HE hopped off the stage. "Cold audience," he remarked to the silent stage manager. "Ah, where's my wife?"

The manager said in a crisp voice, "If it weren't for her I'd have you thrown out of the hotel."

Paddy bowed stupidly. "And how do you mean if it weren't for her?"

The stage manager said contemptuously, "You saw her dance. The Lords seemed to like her. I advise you to stay in your bed tonight."

A great light burst into Paddy's brain. "Dance? You mean that she was . . . You mean . . ." He bent at his brows. "And that was . . . Ah well, never mind. Where is the little deceiver?"

"She's in the dressing room, waiting for the next scene."

"I've got to see her," Paddy ran down the ramp, bumped into Fay coming around the corner.

"We've got to leave," whispered Paddy. "They'll be after us at any time."

"Why the rush?" asked Fay, coolly.

"I want to Suite Tan to get the book. I just had it in my grasp when the hard-looking Councilor of them all walks in and takes it clean away from me. As soon as he sees what's in it and decides what it is he'll have the bounds out after us, all of them. The sooner we're off, the better." Paddy paused for breath while Fay looked on with a slight smile.

Paddy heaved a great sigh, ruffled his black hair. "No, no—it's no good. You go off, wait for me in the ship. I'm going now to find that balking big Baden and I'll take that book away from him. I'll get it, and no mistake."

"But you be off, so they won't catch both of us. Besides," and he looked narrowly toward the stage manager, "I don't think they're planning anything good for you this night."

"Paddy," said Fay, "we'll both go. And the Baden will find nothing in the book. I got there first and I got the Sec's memorandum. It's in my shoe right now. The sooner we're back on our ship the better."

## CHAPTER VIII

### *Hunted*

PADDY awoke from deep sleep to find the ship floating free. He peered out a half-eye. Space surround-

ed them like a vast pool of clear water. Astern glittered Schent, to one side hung yellow Alpharata, and ahead down a foreboded line ran the wires of Andromeda's body—Adfil the train, Mirach the lance, Almach the shoulder.

Paddy unspooled the elastic sheet, clambered out, stepped into the shower, stripped, turned on the mist. The foam searched his pores, sloughed out oil, dust, perspiration. A blast of warm air dried him.

He dressed, stepped up to the bridge deck, where he found Fay leaning over the chart table, her dark hair tousled, the line of her profile as clean and delicate as a mathematical curve.

Paddy exhaled. Fay was wearing her white blouse, dark green slacks and sandals and seemed very calm and matter-of-fact. To his mind's eye came the picture of the near-naked dancer in the fantastic gift headress. He saw the motion of her cream-colored body, the gleam of muscles, the abandoned tilt of her head. And this was the same girl.

Fay looked up into his eyes and, as if divining his thoughts, smiled faintly, maddeningly.

Paddy maintained an injured silence, as if somehow Fay had cheated him. Fay, for motives of her own, did nothing to soothe him but turned back to the sheet of metal she had taken from the Baden block. After a minute she turned back, handed it to Paddy.

It was minutely engraved in the Baden block. The first paragraph described the space-drive tube, giving optimum dimensions, composition, the tri-axial equations for its inner and outer surfaces.

The second paragraph specified the type of field-coils found to be most efficient. Then followed two columns of five-digit numbers, three to a column, which Paddy—remembering the secret room at Akhabata he had broken into—knew to be field-strength settings.

Fay said, "I opened the Phernic can, looked into it also. It had a metal sheet something like that one—describing the tube—but instead of detailing the coils it prescribed their spacing."



Paddy nodded. "Duplication of information."

"We've got two of these things," said Fay seriously, "and it's uncomfortable carrying them around with us."

"I've been thinking the same thing," said Paddy. "And since we can't get in to Earth— Well, let's see. Delta Trianguli is pretty handy and there's an un-inhabited planet."

The planet was dead and dull as a clinker, showing a reticulated surface of black plains and random flows of cratered scoria three miles high, ten miles wide.

Paddy made an abrupt gesture. "The problem is not so much hiding our loot as finding it again ourselves."

"It's a big planet," said Fay dubiously. "One spot looks like another."

"It's a night-swing planet," declared Paddy. "A dirty cesspool, shunned by polite society—all ragged and grimey and patched. Sure, I'd hate to be stood down there in the waste."

"There," said Fay. "There's a landmark—that pillar or volcanic neck or whatever it is."

They settled to the black sand of the plain and it cracked harshly under the ship. The pillar rose high above them.

"Look at the face it makes," Paddy pointed out fancied features in the rock.

"Like an angry dragon or a gorilla."

"Angry Dragon Peak—that's its name," said Paddy. "And now there must be a cubbyhole somewhere near."

In their space-suits they crossed the level space, the black sand crunching and squeaking underfoot, climbed the tumble of rock and found a fissure at the base of the mouth.

"Now," said Fay, "somehow we've got to locate Angry Dragon Peak on the planet. We could cruise months around these badlands looking for it."

"Here's how we'll find it," said Paddy. "We'll take a head bubble from one of the spare space-suits, and leave it here—with the ear-phones pressed up against the mouthpiece, and the switch on 'Converse.' Next time we come we'll send out a message and the receiver will pick it up and bounce it back to us, and

we'll go down along the direction."

BEHIND them lay the dead planet of Delta Trianguli. Paddy looked out ahead. "Addi's nest, then Loristan."

He picked up the key, scrutinized the letters on it. *EXUM NON LANG SON*.

He chewed his lip. "Now this is a different problem. On Alpharata A and on Radon we at least knew which shelves to buy at. But this time we have a key, and there's a million doors on Loristan, not to mention boxes, drawers, lockers, padlocks, jam cupboards—"

Fay said without raising her head, "It's not that difficult."

"No? And why not, pray?"

"Loristan is banker, broker, financier to the Langtry world. The Loristan Bank regulates currency for the entire galaxy and there's nothing like its deposit boxes for safety. They're so safe that not even the Sons of Langtry themselves could break into a box. And that's what that key is—a safe-deposit key."

"And why is this safe-deposit system so safe?" asked Paddy.

Fay leaned back against the bench. "First the central vault is encased in eight inches of duribite and guarded by explosive mines. Then comes a layer of molten iron, then more duribite and more insulation, then the vault. Second, the goods are banked mechanically, without human handling or knowledge."

"You go to the bank, buy a box, put in your valuables, take the key. Then you code the box with whatever arrangement of letters you wish and drop it in a chute. The machine carries it away, stacks it, and nobody knows where it is or which is which or whose is whose. The only records are in a big grating brain."

"To get your box, you go to any branch, punch your code on the buttons, insert your key and the combination brings you your box. Neither the key alone nor the code alone have any effect. The box holder is doubly protected against theft."

"If he loses his key or forgets the

code then he must wait for the ten-year clearing, when all boxes which have held undisturbed for ten years are automatically ejected."

"So," said Paddy, "all we do is drop down to Loristan, use the key and take off again?"

"That's all," said Fay. "Unless—"

"Unless what?"

"Listen." She turned on the space-wave. A voice spoke in the Steel dialect, "All citizens of the cluster be on the look-out for Paddy Blackthorn and the young woman accompanying him, both Earthers. They are desperate criminals. Reward for their apprehension five to a million marks a year for life, perpetual amnesty for all crimes, the freedom of the universe and the rank of Langtry Lord."

"They really want us," said Fay.

"Ehh—Motes!" And they heard the Steel describe them in precise detail.

Another voice began to repeat the same message in Koton. Fay turned off the set.

"We're being hunted as Grover O'Leary hunted the white-eyed dog—with tooth, nail and all odd angles."

Fay said, "I tried to make contact with Earth but there's still interference. No doubt the blockade is tighter than ever."

Paddy grinned. "And how about your Earth Agency then, that you train so exhaustively for and evidently serve with your every resource?"

Fay put on her faint smile. "Paddy, do you know I trust only three people in the world? Myself, the chief of the Agency and you? After all the Agents are human. That reward would turn almost anyone's head. And all for a very small whisper."

"The fewer that know, the better," Paddy agreed. He ran his hand through his hair. "Black-haired, they said. They must have caught Dr. Tallorg."

"Or maybe they tied together the Earther vandals on Alpharata A and the kept performers at the Kamberton Arrowhead."

"That sexy dance wasn't inept. You looked as if you had lots of experience."

Fay rose to her feet. "Now don't be so old-maidish. Certainly I have good coordination and I've had dancing lessons. Anyway, what do you care about my past? I'm not your type. You like those cow-eyed understanding Herve women, remember? So much to squeeze, remember?"

"Ah, so I did," sighed Paddy, "but that was before I saw that smooth pet of yours and now I'm tempted to change."

"Fish! I'm plain. Remember? With a skinny pastorial. Remember?"

"Very well then," said Paddy, turning away. "Since you've the memory of the most reverential elephant of India you're still plain and still skinny."

Fay grinned to herself. She said to his back, "We'd better try to change our appearances. There's hairwash and Optichrome in the locker. Maybe we'd better be blonde for a while. We'll dye our clothes also. And I'm going to cut your hair short and wear mine differently."

**Y** ORISTAN was a small world and L mountainous. Great forests of trees a mile high charged the air with oxygen and a visitor's first experience with the low gravity and the oxygen produced a fine exhilaration.

Where the cities of Alpharata A and Badan were low and severe Riverd and Thun, the twin cities of Loristan, reared spectacular towers into the air. Restrooming planes of arched metal hung between, conquering space, sometimes for no other purpose than sheer exuberance. Raw rich color glowed everywhere. There was no gloom on Loristan, none of the Pharsate mysticism, the Badan stolidity. Here were bawls, aggressiveness, activity.

Paddy now had bright blue eyes and cropped blond hair. The combination lent him an expression of boyish mischief. He wore a Mouze stamped with patterns after the Pindolistic school, loose breeches flapping at the ankles.

And Fay—where was the slender dark-haired girl Paddy had first seen? Here was a bright eager creature with

white-gold all-locks, eyes blue as a frosty morning, strawberry mouth. And every time Paddy looked at her he groaned inside and the word *Maeve* came to be hated. Twice he tried to grab her and kiss her and twice she ducked and sprang across the cabin. Finally Paddy heaped to a sullen indifference.

Loristan widened below, and the twin cities twinkled like jewels.

"Well," said Fay, "what'll it be? Shall we sneak down to a landing somewhere in the forest or use the public field, held as life?"

Paddy shrugged. "If we tried slipping down out in the woods or in that Big Jelly Swamp they show on the chart there'd be a dozen guardboats on us like birds on a nutmeg. But when we pull into their public field they rub their hands and say, 'Fine, another couple of Earther scoundrels to be fished,' and that's as far as their minds reach."

"I hope you're right," said Fay. She touched the controls, the boat nosed down. They slipped quietly to a landing on the pitted field, settled among a dozen other boats of similar model. For ten minutes they sat, watching through the observation dome for any sign of undue interest.

No one seemed to heed them. Other boats took off and landed, and from one of the incoming ones a dark-haired Earther couple alighted. Coincidentally, the man wore a blue jumper.

Fay nudged Paddy. "Let's follow those two. If there's any suspicion, they'll certainly arouse it."

The two Earthers sauntered off the field and no one looked at them twice. With more confidence Paddy and Fay followed, through the terminal lobby and out upon the shining streets of Rivert.

"There's the bank," said Fay, nodding at a spire of red marble shafted and apointed with silver, "and there, see that counter along the side? That's the safe deposit. You need never even step inside."

Faddy said half to himself, "It can't be this easy."

"It can't be," said Fay. "I feel the

same way. As if this city is wired like a big burglar alarm—a trap—and that red spire is nothing but bait for Paddy Blackthorn and Fay Bursill."

"It's a bunch I have," muttered Paddy. "A bunch that something is fishy."

Fay looked up and down the street with her new blue eyes. "Every bunch is supposed to have subconscious reasons for being."

"It's all too bright and open. Look at those butter-yellow Loristanans in the little pleated shirts, with their silly smiles on their faces and those saucy little caps. It's as if they're all nudging each other with their elbows, telling each other to watch the big joke when the ace falls on Fay and Paddy."

Fay squared her small shoulders. "Give me the key. All we can do is take a chance. After all we have two-fifths of the data and we could always bargain for our lives."

Paddy said gloomily, "You don't bargain in a nerve tube. You talk and gloat too. Those two sheets aren't safe till they're out of our hands."

"Well, we'll have to take the chance. Give me the key. You wait here and if anything happens go back to the ship, take off fast to Delta Trianguli, pick up the sheets and get away with them."

Paddy snorted. "What do you take me for now? I'm thinking you're becoming too bold and independent with your ordering. It's me that'll go up there and draw the box's teeth. There was never a Blackthorn yet that his woman did up the steps for him, and we won't ever start here out on this drunken planet Loristan."

"Boom—boom—boom," jeered Fay. "You sound like you're running for office." But she smiled and was evidently pleased. "Oh, let's both go. Then there won't be any argument and we can both feel virtuous."

With pumping hearts they marched up to the bank, found an empty booth. An armed guard stood at either end of the counter but paid them no heed.

Paddy pushed the key in the slot. Fay punched out the code on a set of buttons—*RIEM NON LANG SON*. Then came

the wall. Ten seconds, twenty seconds—it was a paralyzed eternity.

A siren shrieked high on the red spine. The doors into the bank slid open, a pair of armed guards strode out toward the counter.

Paddy squared off. "Run, Fay—quick now. I'll hold 'em. They'll never take me alive. Run, girl! Get to the boat. You know where we've hid the stuff."

**F**AY signaled nervously. "You fool, shut up. It's lunchtime. They're the relief guards."

A rattle, a click and a package fell into the hopper at their counter.

Fay picked it up, covered the green-and-orange medallion of the Loristan Langryns.

"Now," she said, "back to the boat."

"They're watching us like hawks," hissed Paddy.

"Come along. You're acting like you've just robbed the bank!"

They walked boldly across the square, turned into the glass-fronted lobby, set out across the field. An armed guard ran toward them, shouted.

Paddy jerked around, put his hand in the pocket where he carried his little gun. "To the ship, Fay," he growled between clenched teeth. "Run. You've still got time."

"No," said Fay. "Wrong again. He's trying to tell us a boat is coming down on our heads."

Paddy, glancing up, saw the underside of a great cushioned boat not two hundred feet above. They dodged swiftly out of danger.

There was their boat—the familiar little hull which had traversed so much treacherous, the observation dome through which they had seen so many stars.

"Inside," said Paddy. "Quick! Oh, there's a trap somewhere. I can smell it. They're trailing us to our boat and they've shorted out our drive." He ran to the controls, jerked the left lever. "See! It's dead. No power."

"Of course not," said Fay. "The port is still open."

She slammed it shut. Paddy threw power to the jets, the boat lifted into

the bright sky of Loristan.

"It can't be this easy," said Paddy, wiping sweat from his forehead. "There must be some catch, some trick."

"It can't be this easy," Fay agreed, watching from the side window. "But it is. No one is after us. No one even knows we've been here."

Paddy sank into a seat. "Phew!" he sighed. "It would be less strain on my poor tired nerves if we had a little trouble. Then I'd feel we had earned our boat."

Fay laughed, tossed the package to the deck, began to tear it open.

It was much like the other two. The first paragraph, like the one on the Phiaros sheet, dictated the spacing of the activation coils. The second paragraph detailed the time-sequences for each of the five banks of coils. Then, as on the other sheets, there were two columns of three numbers apiece.

"We're off to Delta Trianguli and Angry Dragon Peak," said Fay. "And then to Almach and we'll see how the Shauls treat us."

## CHAPTER IX

### Not So Loud

**A**LMACh lay to the right and below. Ahead hung the lurid face of Shaul. Paddy turned away from the telescope, sat in disgust.

"The first Langry Son was a maniac when he picked this planet. It's like the hell old Father O'Toole predicted for me. I believe I'd rather raise my cottage in the shadow of the Angry Dragon." "Shaul's very beautiful," Fay said softly. "In a frightening sort of way."

"It's a yelling Balan's kitchen of a planet. Now see there—those orange spots. Are they volcanic craters or are they not?"

"They are."

"And those lava flows and steaming cinder heaps and the dust storms. How can man live on a planet like this?"

"They grow slaps of skin to protect their racks and to shield their faces," said Fay. "They develop a tolerance for acid in the air and don't feel any unless they're mining the marvelous ores and jewels of Shaul."

"I've no slaps of skin," growled Paddy. "I don't like acid and I don't like tunnels since the affair at Alphabeta—though my ideas are not in demand. Now then, where are we heading?"

Fay said, "Corosacca. The back wall. Irradiate with angstroms 685, 1444, 3539, 3661. Photograph!"

Paddy looked up marvelling. "And you remembered all those numbers?"

She twisted her lips in a beautiful crooked grin. "I've got a good memory. And we're trained to use it in the Agency. It's easy to memorize numbers, once you know how."

Paddy made a long face. "And now you'll be telling me how you do it. Six eight five—add six and eight. That's fourteen; the one and four make five, and that's the third number. Also the one and four in one four four four. As for the two last fours, they make eight, and since there's two of 'em, double it and that's sixteen. One from six is five, and there's your one four four four. Now as for two five nine eight—"

Fay said, "When you've done talking like an idiot, look up Corosacca in the almanac."

Paddy thumbed through the Langtry Directory. "There's no Corosacca listed."

"None?" asked Fay in a hush voice.

"None. But we'll find it. And we'll need a camera and a means to deliver radiation at those frequencies."

"There's a good camera in that forward gear locker. Case Five, I think. We'll need respirators but we can't get those at the space terminal and I suppose we can have a projector built for us at Aevolye."

"Correct. And now it's the hour's end. Let's hear the news."

Fay turned on the space-wave. A Shaul voice spoke from the mesh. "An official release from the capitol has confirmed the rumors circulating the system for several weeks.

"Kaktheyou, Shaul Son of Langtry, together with the Sons from Alphabeta A, Bades, Loristan and Koto, was killed by an Earther pirate at the yearly council.

"The Earther, a convict by the name of Patrick Blackburn, escaped and is the quarry of the most intensive man-hunt in history. Reward for his capture reaches unprecedented heights. There are hints that Blackburn escaped with valuable space-drive information.

"The new Shaul Son of Langtry, Cheyoski Decca, has announced that the mass assassination has created no emergency, that the fabulous rewards are offered merely to bring the Earther monster to justice.

"Blackburn has been reported in hundreds of localities and each report is being carefully checked by local police. His last authoritatively known position was at Space-Ace, Thiefor Cluster, in the company of a young Earther woman, name unknown. However there are other clues which the authorities will not publicize."

Paddy slumped back in the seat. "Fak! We've wanted, we've wanted had!"

Fay said, "There's all space to hide in, a lot of little planets, a lot of big ones. For all anyone knows we might have taken off on a line and be clear out of the cluster by now."

Paddy grimaced. "I keep seeing a picture of us hanging by our heels from a post or kicking inside a nerve suit." He wiped his forehead, ran his hand through his blood bristles. "It gives a man the value of his existence, this life of the hare and the hound. And never a priest to help you into the blessed life to come."

"Pish," said Fay. "Confess to me if you want to."

"Very well and why not? It's the instant that swatches a man's soul free of guilt. Now then, sister," and Paddy studied the bulkhead, "there was a sin which occurred on the planet Meave but it's to be supposed I was sorely tempted.

"Ah, there's a green garden there at Meran—a terrace where men sit under plane trees and drink the soft mouth-

sitting beer at the place. Then these soft-eyed girls come swinging by with their shoulders and their long brown legs bare.

"They wear pearls in their noses and emeralds in their ears and when they look those long slow looks there's honey in a river between you and all the will for a decent Christian life flies away like gulls down the Bloody Portland. Now then—"

**F**AYE face twisted in rage and disgust. "A confession? Pah! You're boasting!" She marched across the table. "The Shauls are right. Further savages think of nothing but their glands."

"Now, now, my dear—"

"I'm not your dear! I'm an Earth Agent, worse luck, and if this weren't the most important thing in my life I'd turn around and bend her Earth and put you as far out of my sight and mind as I possibly could!"

"Now, now, now. You don't know how lovely you look with your little face all pink with rage."

Fay laughed bitterly. "Rage? Not on your life!" She strode to the galley and poured herself a bowl of soup, which she ate with crackers in moody silence.

Still turned away from Paddy she said, "We'll be landing in an hour or two."

Paddy interpreted the statement as an invitation to join her. Sitting down he chewed reflectively on one of her crackers.

"It's a sad responsibility for a pair of feeble humans. . . . Now had we old Father O'Toole with us he'd go forth, take the data, hide all in his cassock, come back to the ship and none would dare to interfere."

"Father O'Toole is far away," Fay pointed out acidly. "We must cope with this problem ourselves. Though I wish he were here and you were back in Skibbereen. . . . We've got a problem which you insist on ignoring. Shaul won't be like Loristan. They've got the brains of the system, the Shauls, and they're over-suspicious."

"Him?" Paddy frowned, drew

the table with his fingers. "If we were journalists when we set down we'd be allowed more freedom with our cameras."

Fay said grudgingly, "You may be a lecher and a thief but you come up with an idea now and then."

They sat a moment in silence. Fay looked suddenly at Paddy with wide eyes. "We'll have to land on the central field, because there's no other. . . . We'll have to go through all that uncertainty again, only the Shauls are more careful and thorough. Suppose they take your psychograph?"

"Suppose they do?" said Paddy lightly. "Don't you know that I'm three different men? I'm Paddy Blackthorn, the Rapparee, and I'm Patrick Blackthorn, the pride of St. Luke's Seminary, who'll talk you the Greek and the Roanah and the Gaelic till your ear shivers for the joy of it, and I'm Patrick Delaney Blackthorn of Skibbereen, the gentleman farmer and horse-racer."

"There's also Paddy Blackthorn the great lover," suggested Fay.

"Right," assented Paddy. "There's four of me and a different psychograph for 'em all. So you see, I've three chances in four to confuse the suspicious devils."

"If you do you'll be the first. You can change your fingerprints but you can't change your brain streamers."

The Shauls had steered off and leveled the peak of an old volcano to make Arveloy's space-field. When Paddy and Fay brought their boat down they found themselves overlooking a vast panorama of badlands, a chopped and backed region of red, yellow and green-gray rock.

Directly below, a tremendous rift rent the planet, a chasm miles across and miles deep. Down one side, on a series of ledges, sat the city Arveloy—white buildings pressed against the walls of the gorge, facing out across the awesome valley.

As Albrecht sank, the light played on wisps of mist hanging in the valley on a level with the rim and the colors were like fantastic music—greens and

lemons, oranges, unbelievable pastels from the reflected and refracted light.

The boat came to rest on Arveye Field—here and quiet compared to the fields at Hadan and Loristan. Fay divined. "We can't help but be noticed."

Paddy looked out the dome. "Here they come—the Canucks!" He patted Fay's shoulder. "The bold front, now, boss."

Four Shaul guards drove up to the ship in a jeep, jumped out. They wore tight sheaths of blue metallic cloth and three carried carbines slung over their shoulders. Their hoods of skin, which they held rigid and still, were stained red and painted with indications of rank. The officer, wearing a black star on his head, climbed up the ladder, rapped smartly on the door.

PADDY opened for him without pumping clear the entrance lock and coughed at the arid dust that followed the Shaul into the cabin.

The officer was a young man, very terse and exact. He pulled out a pad of printed forms. "Your papers, please."

Fay handed him the ship's license. The officer bent to look.

"Albuquerque Field, Earth." He looked up, turned to Paddy, scrutinized him up and down. "Name, please?"

"Mr. and Mrs. Joe Smith."

"Your business here on Shaul?"

"Business and pleasure," Paddy replied jocularly. "We're tourists and journalists at the same time. We've been wanting to make the Big Line, and when we caught the news of the assassination we thought maybe we'd take some pictures around the planet."

The officer said without emotion, "Earthers are not in good reputation around the Five Planets."

Paddy protested, "Ah now, we're just working people and we've our living to make, whether there's births or deaths or war or peace. And if you'd say a good word for us we'd sure appreciate it."

The officer swept the interior of the craft with his eyes. "We don't have too many Earth journalists sitting down at Arveye in these small boats."

"Listen now," said Paddy eagerly. "Then we're the first! There's been none from the Pax Syndicate—that's our competitor?"

"No," said the officer coolly. "You're the first." He returned to his printed form. "How long do you plan to stay?"

"Oh, maybe a week or until we accomplish our business. Then maybe we'll be on to Loristan or Kato for more."

"Ghosts," said the officer under his breath. He handed them an ink-pad. "Your thumbprints, please."

Gingerly they pressed their identities on his sheet.

"Now"—he wrote a moment—"here's a receipt and I'll have to take your power-arm and keys. Your boat is impounded. When you want to leave apply to Room Twelve, Terminal Hall, for a permit."

"Here now," protested Paddy. "Isn't this high-handed? Suppose we want to tour across the planet?"

"Sorry," said the officer. "There's a state of emergency, and we're bound to take precautions until things are normal again."

"Now then," Fay said nervously, "we don't mind a little inconvenience if we get what we want."

The officer was copying information from the ship's papers. At last he looked up, produced a pair of small flat boxes.

"Here are temporary respirators, which will serve until you buy permanent breathers. Now, please, if you will come with me there's a formality required of all Earthers."

"And what's that?" demanded Paddy tranquilly. "A return to the old closed-space system? I'll have you know I'm a citizen of Earth and Ireland too and—"

"I'm sorry," said the officer. "I merely obey orders, which are to pass all Earthers, no matter how innocent, through the psychograph. If you are not a criminal, then you need not worry. If you are, then you will be accorded justice."

"The psychograph is not an instrument for innocent people," said Paddy. "Wag, the indifference of it! I'll leave the

planet first and spend my money on Lortistan."

"Not now," said the officer. "I regret that these are emergency conditions and that certain hardships must be endured. Please follow me."

Paddy shrugged. "As you wish. I'll have you know, however, that I protest bitterly."

The officer did not reply but stood watching as Paddy and Fay donned their respirators. Fay's mouth dropped, her eyes were moist when they fell on Paddy. Paddy moved with sullen deliberation.

The officer gave them seats in the jeep, trundled them to a ramp leading to a hall under the field.

"Into Room R, please."

In Room R, they found three other Barthers, two angry old women and a sixteen-year-old boy waiting for their psychographs. One by one they were taken into an inner room to emerge a minute or so later.

At last the Shaul nurse beckoned to Fay. "You first, please."

She rose, patted Paddy's cheek. "I'm sorry it had to end like this," she said softly and disappeared.

A MOMENT later the attendant mentioned for Paddy.

Paddy entered a room, bare except for a desk, a chair and the psychographer. A doctor stood waiting while an orderly in blue metallic military uniform sat by a desk watching a screen with a psychograph pattern pinned to a board beside it.

The doctor looked at Paddy once, then again searchingly. He turned to the orderly. "This one fits the physical data. The face is different, the hair and eyes are different but of course . . . Into the chair, please," he said to Paddy.

"Just a minute," said Paddy. "Am I a common criminal then?"

"That's what we are about to find out," the doctor told him quickly. "In any event this is merely a routine check."

"What's all this?" Paddy mentioned to the screen and the psychograph pinned

up beside it—a pattern of lines like a weather chart superimposed on a relief map of the Himalayas.

"That, my friend," said the doctor imperturbably, "is the psychic pattern of Patrick Blackthorn—and if I may say so it's the oddest pattern I've ever seen. It's unmistakable."

"There's little chance of doing anyone injustice. Now if you'll take this seat and let me fit these pick-ups on your head. . . ."

"I'll be 'em," growled Paddy, taking a seat. He jammed the contacts down across his scalp. "Go ahead now and be damned to your bureaucratic goodness."

The doctor snapped a switch. Paddy felt a slight tingling, a momentary drowsiness.

"That's all," said the doctor, glancing across to the orderly.

"Strange," muttered the orderly. "Come here, doctor. . . ."

The doctor stared curiously at Paddy's pattern, shook his head. "Strange."

"What's strange?" asked Paddy.

"Your—ah, pattern. It's hardly typical. You can go. Thank you."

Paddy returned to the anteroom, found Fay pacing the floor nervously. She gave a small squeak, "Paddy!"

The attendant looked up sharply and Paddy's knees wobbled. Fay's eyes grew large and moist. She blushed red. Taking Paddy's arm she pulled him out into the big echoing lobby.

"Paddy," she whispered. "How did you get away? I was waiting with my heart in my mouth, waiting for the shouting and hanging—"

"Shh," said Paddy. "Not so loud, and I'll tell you a great joke. I was once in a bottle and they lifted my scalp. The doctors sewed me up again with a big platinum plate across my stomach. I can laugh at those psychographs, because the metal shorts them all out and they never read the same on me."

Fay bristled like a porcupine-shh.

"Why didn't you tell me?"

Paddy shrugged. "I didn't want to worry you."

"Worry—Shh! I'm only worried because now I'll have to live with you



another couple of months."

"Now, now, my dear," said Paddy abstractedly. He took her arm. "And here is where we get our brothers."

## CHAPTER X

### *One Little Kiss*

COMING out of the terminal, they found themselves on a balcony hanging over Auroville like an eagle's wings. They stood in a bath of canary-yellow light and the sky over them had taken on an odd amber hue. Paddy and Fay crossed the balcony, stepped aboard an escalator which dropped them down, down, down to the white-columned city below.

They passed great residences perched on ledges, airy white houses set among the strangest vegetation of their experience. Stalks like stalks of tetrahedrons supported a foliage of crystalline spines or groups of olive-green slabs reticulated with slabs of red glass or flowers that were like an instantaneous photograph of an exploding opal—fragments held out from a center by invisible tendrils.

The buildings became of a more commercial character—shops displaying the richest wares of the universe, and presently Fay spied a sign reading TRAVELER'S HAVEN. They stepped off the escalator, walked along a traffic overhanging a thousand feet of clear space to a tall edifice of concrete waxy-green, serpentine polished granite.

They entered, crossed to the desk. "We'd like lodgings," Paddy told the Shal clerk.

The clerk flipped his head casually, gestured to a small sign—*Further trade not solicited*.

Paddy tightened his lips, narrowed his eyes. "You skin-headed little runt," he began. Fay clutched his arm. "Come, Paddy."

The clerk said, "The Earther hotel is down the slope."

Outside Paddy snapped, "Don't call me Paddy. I'm Joe Smith. Do you want them jumping on my neck?"

"I'm sorry," said Fay.

The Earther hotel was a gray block in the lower part of the city between two heaps of slag from a steel refinery on the level above. The clerk was a wrinkled black-eyed Canope, crouching behind his desk as if he feared his guests.

"We want two rooms," said Paddy.

"Two?" The clerk looked from one to the other.

"My wife agrees," explained Paddy. "I want to get a good night's sleep somewhere along the trip."

Fay snarled under her breath. The clerk shrugged, "Just as you like." He eyed Fay speculatively, handed them a pair of keys. "The rooms are dark and turned away from the view but it's the best I can do for you at the moment. Rent's a day in advance please."

Paddy paid him. "Now we'd like some information. We're journalists from Earth, you see, and we're to take some pictures and we find our special lamp has come apart. Where can we have one made to our order?"

The clerk turned, punched a button, spoke into a mouth. "Is Mr. Dene there? Send him across, please. I've got some business for him."

He turned back to his guests. "This is an old electrician that's down on his back and he'll do for you. Is that all?"

"Where and what is Corcoran?" asked Fay.

"Corcoran?" The clerk's mouth opened a little. He blinked uncomfortably. "You'll find it hard seeing Corcoran—especially as you're Earthers. It's the dead Son's private residence out across the Punishment Ventrals."

Dene hobbled in, a one-eyed skinny old man with a crooked neck, a long bent nose. "Yes, and what might ye be wanting?"

Paddy said, "We need a special ultraviolet light source for our camera. It must have four separate units with variable frequency-controls for each unit over the range six hundred to

three thousand one hundred angstroms. Can you make it up?"

Dane scratched his pate. "I'll see if I've got the proper valves. I think I can do it." He cocked a bright glance at Fay. "It'll cost you dear, though. Three hundred marks."

Paddy drew back in indignation. "Faith, now, I'll use my flashlight first. Three hundred marks for a few bits of wire and junk?"

"There's my labor, lad, and my training. Long years now I've studied."

Two hundred fifty marks was the figure finally reached, delivery to be made in two days.

Darkness filled the valley outside like pale ink in a vast basin and the slope above was hung with a thousand colored lights—red, green, blue, yellow, all soft and vague as if their purpose were less to illuminate than to decorate.

ON the terrace outside the hotel Paddy said to Fay, "Do you know, I can feel something of what the first Son loved in this planet Shaul. It's as violent and queer as a madman's whims but the color and now the softness of the night are wonderful. And out there across the valley there's another settlement and the lights glow across to us like fireflies."

Fay said softly, "Is it nicer than Skibhoreen, Paddy?"

"Aht," sighed Paddy. "And now you've touched me, my dear. When I think of the turf-smoke that they still burn after all these ages and how it comes drifting in from the bog and the old pub around from where I was raised and the River Ilan—yes, I'll be glad to get home."

"Then there's always the terrace at Meran," suggested Fay, "with the beer and the women."

"Aht!" cried Paddy. "The beer, it's like the nectar of paradise and the girls with their soft hands! If you catch the pearl in their nozzles with your teeth, then they must do your bidding for as long as you will—that's the custom of Meran—and some of them wear pearls as big as plums."

"If you'll excuse me," said Fay coolly, "I'm going to buy a map and find Coracoga. I'll leave you to your reminiscences."

"Here now," cried Paddy. "Faith, I was but teasing. And you started me out on it!" But she had disappeared.

Next morning they took possession of a rough-clearing old sightseeing platform—the proprietor of the rental yard had been reluctant to trust Earthers with anything better—and loading the camera ahead they shovelled off and out across the busy valley.

Paddy said, "And now where's Coracoga that you studied on last night?"

"We've got to find Fumighast Ventricle," said Fay. "It's supposed to be twenty miles north, a dead crater."

They rose out of the valley into the blast of Almach's light and the complex face of Shaul spread out to all sides.

Fay pointed. "See that smoke rising? That's the volcano Aurea and just beyond is Coracoga."

Fumighast Ventricle was another vast chasm in the planet, nearly circular in cross-section and so deep that its bottom could not be distinguished through the haze. The sides glistened and glittered, rays of light flashing and darting in a thousand directions like glass spears—back and forth, reflecting in sprays of pure primitive color, flickering, dancing as the heat sank on smoldering old jets.

As they reached the mouth of the gap there was a sudden *crash* and a guard boat hung alongside.

"What's your business?" asked a Shaul with a black star painted on the inside of his head.

"We're journalists from Earth and we want to photograph the home of the dead Son."

"Do you have a Decency Certificate from the Office of Riles?"

Paddy shoved his head forward. "Decency Certificate? Of course I'm decent, you insolent thrush! And I'll come aboard you in another minute."

Fay smiled him. "He means a permit. That's their way of speaking."

Paddy subsided with ill grace.

Fay said cheerily to the corporal, "No, we don't have any permit but all we want to do is take a few pictures."

The corporal said stiffly, "I'm sorry but—"

A Shaul in civilian dress, standing beside him, muttered into his hood. The corporal stared at Paddy intently. "When did you arrive?"

"Yesterday."

The corporal dialled a communication, spoke at some length, nodded. He turned to Fay and Paddy.

"The orders are to let you down."

"Thanks," said Fay.

Paddy whispered, "The suspicious devil, they want to trap us and I'll bet you they watch us through telescopes all day."

Fay said, "It's a ticklish feeling—almost as if we're trapped in this hole."

"Hush now," said Paddy. "There's still the Blackburn back on our side."

Down into the glistening gap and they saw that the walls were lined with great banks of crystals, hanging like bunches of grapes. As Almash rose in the sky, the colors glimmered and twinkled, wave magic nets across the gap, tangled meshes of near-tangible fire. On a ledge a thousand feet below the surface sat a great house, a hall with two wide white-columned wings in a wide garden of the peculiar crystalline plants.

**S**WOOPING from nowhere the guard-ship drew alongside again.

"As a courtesy due journalists from Earth you have been extended freedom of the house. The bereaved family is not at home but the servants have been instructed to assist you. They will serve you what food and drink you wish."

He bowed with sardonic courtesy and the guard-ship rose swiftly as if it had been jerked up by a cable.

"Rate is a trap," said Paddy.

"Probably they don't suspect us directly," Fay said thoughtfully. "They think we might possibly be some sort of accomplices. They're giving us plenty of rope. Well, we'll worry about it later. It's a chance we have to take."

They landed on the terrace amid utter

silence. The cool space of the house opened in front of them and through the columns they could see the rich furniture for which the Shauls were famous—chairs of every height and inclination, walls upholstered in peach-colored foam.

There was no door, no glass—merely a curtain of gripped-air to exclude insects and dust. It parted in front of their faces with a slight sensation of buffeting as if they had walked through a soap bubble.

The major-dome, bowed slightly and for the next hour conducted them about the villa, answering their questions but volunteering no information. Clearly he considered the task beneath his dignity. Paddy and Fay snapped pictures at random.

The area of interest for Paddy and Fay was the terrace behind the house. Shielded from the polychrome radiance of the chamber it was bathed in a soft cool light from the sky. At the rear the cliff rose, faced to a height of fifty feet with two-foot squares of aventurine quartz.

Inevitably both counted three from the right, two up. There it was, a clear yellowish slab, flecked with a million fitting speckles.

A wait-maissant appeared to announce lunch and the major-dome conducted them to a small table set with synthetic fruits, a platter of toasted fungus, pearl wafers and rods of a porous dark-brown substance which crunched and tasted like meat.

Paddy was glossy. Twice he looked at Fay, started to speak but was deterred by her warning frown. The major-dome served them a light pink wine, which they carried to the railing around the terrace, where they stood overlooking the gulf.

Fay said without moving her lips, "I feel as if every word is being picked up and broadcast to a desk where three or four Shauls are listening in dead silence."

"So do I," muttered Paddy.

Fay sipped her wine, stared out across the color-shot emptiness. "We can't do anything more today."

"No, let's get back to Avelupe and our ship."

As they cleared the mouth of Funch-ghost Ventrals the guardship belted down, pulled alongside and the Shaul corporal requested the film pack of the camera for cine-strip purposes.

Gladly Paddy slid off the cartridge, handed it across the gap.

"It will be returned tomorrow," said the corporal.

Their ship had been searched. Nothing was out of place. Indeed the strongest indication of the search was a rather marked neatness to the cabin.

"Ah, the vandals!" Paddy ground between his teeth. Now I wonder if—

He met Fay's eye. She gave him such a brilliant glance that he subsided, and did no more than mutter under his breath.

For half an hour they spoke nothing but generalities. Then, with Almach settled in its frame of lavender and orange light, they left the boat, walked to the edge of the field, looked out across the great gorge, which was already filled with partial shadows and glowing tendrils of mist.

Fay said, "They may not have the ship tapped for sound and there may not be a spy cell peering at us somewhere—but as you know they're suspicious creatures and they're probably overlooking no chances. It seemed to me that their search job was just clumsy enough for us to notice and then start frantically after any secrets we might have had."

"Fay," said Paddy gloomily, "we're at a dead end. We're at a standstill. Any pictures we take they'll scrutinize with eyes like curycornbs. If we try to bust down there with our ship, take our pictures and lambaste out again, they'll have us bottled up like the Green Imp of Ballycastle."

FAY, rubbing her chin with a pale finger, said nothing. Paddy felt a sudden surge of the protective instinct. Glancing down at the blonde head beside him he wrapped an arm about her shoulders.

She said, "Paddy, I've got an idea. . . ."

Paddy looked off into the night. "I've got one too."

She looked up quickly. "What's yours?"

"You tell the yours first."

"Well—you know that in all probability the Shaul data has been engraved or painted somehow in that adventurous quartz in a fluorescent dye which glows at the proper frequencies."

"Sure—of course."

"Presumably the whole wall glows—but only the single plate will have a legible message when illuminated by the particular four frequencies."

"Right."

"Tomorrow night we'll do some night photography—hundreds of shots."

"Ah," said Paddy, smiling whimsically down into her face, "and what a brain you hide behind that sober little face?"

She laughed. "Now, what's your idea?"

Paddy said with a stammer, "I want you to marry me, Fay."

"Now, Paddy Blackthorne," said Fay, "you don't want to marry me any more than you want to marry that Shaul corporal."

"Ah yes, I do—and never say I don't," said Paddy energetically.

"Took, it's propinquity—animal spiritus. A day before on Earth and you'll have forgotten all about me."

"Then you refuse me?" And Paddy narrowed his eyes.

Fay looked away. "I didn't say yes and I didn't say no. And I won't till after we're finished with this job and I see what kind of a gentleman you are and how you conduct yourself when there's temptation in front of you."

"Now, Fay," said Paddy, squeezing her to him, "then it's yes?"

Fay pushed him away. "It's a no—for now. And a maybe if I find you've stopped thinking about those Maave women. How'd I feel with a home and two or three little Paddys and you picking at all those Maave girls' legs?"

"Now enough of this nonsense," she said. "We've got the most important job

that's ever been and all you talk about is Maaso women. . . ."

"Just one little kiss," pleaded Paddy. "Just so that if the Shauls get us, I'll die happy. Just a little kiss."

"No—well, just one. . . oh, Paddy. . . All right now, get away from me or I'll close your food until you won't know a woman from a barn owl."

## CHAPTER XI

### *The Plain of Tshia*

**T**HE next day was quiet. During the morning Fay pursued the ostensible purpose of their visit by making biographical memoranda concerning the life of the late Sen at the Propaganda Office.

Paddy visited Dane, the electrician, and took delivery of the ultra-violet projector.

Dane was proud of his work—an aluminum case eight or nine inches on a side with a handle for carrying. Four knees opened into the front, a power-pack fitted into clips at the back, in a row along the top were four timers with vernier settings, four output valves, four switches.

"And is it accurate?" Paddy asked skeptically.

"Accurate?" cried Dane. "It's as accurate as the Interworld Standard that I calibrated it by! Three times I checked each one of the circuits and there's never an offbeat!"

"Good enough and here's your money with a bit of a bonus."

During the afternoon a messenger delivered the prints to the pictures they had made the previous day. None was missing nor were there any deletions.

Evening came with its violent flare of color. Paddy and Fay stacked their equipment on the dilapidated old aircraft, rose over Aerelya, took off for Fumigant Ventrole.

Over the mouth of the hole the gashed ship pulled up alongside.

The same corporal saluted them, glancing at their makeshift equipment with contemptuous amusement.

"What is it now? More pictures? It's dark."

"We'd like to get some night shots," said Fay. "To get the effect of the lighting and the fluorescence of the rocks. We've brought along an ultra-violet projector."

"So, that's why you had that thing built!" said the corporal. He shrugged. "Go to it."

They dropped away from him into the chasm. "So that's why you had that thing built!" Paddy mimicked in a girlish falsetto. "Strange he didn't ask when our wedding was to be—they seem so interested in all our doings."

They landed on the terrace in front of the house and the darkness, faintly luminescent, was like the fog of dream.

Fay sighed. "If I weren't so scared and nervous I'd be in love with the place."

"Maybe we'll come here on our honeymoon," said Paddy. She peered at him through the darkness to see whether or not he was serious.

A voice at their elbow said, "Good evening." It was the Shaul major-domo. "More pictures?"

"More pictures is right," said Paddy. "We'd like some shots of you making the beds and maybe dumping the garbage down the chute or maybe putting away the famous silver."

"I'm sorry. I'm afraid that is impossible."

"In that case, with your permission we'll just infect the outer grounds."

"My permission has not been sought," replied the major-domo with a soft sibilant edge to his voice. "The orders to throw the grounds open to anyone who chose to drop in came from Aerelya."

Paddy grinned. "You and I now—we'd made a good pair on the stage."

The major-domo's head vibrated rapidly. He turned and walked off.

For an hour they took pictures of the villa and the silent garden, using a vari-

city of ultra-violet frequencies. At last they worked their way around to the back terrace.

Paddy turned the projector against the back wall. It flashed beautifully in striking patterns of red, fiery yellow, gold, lemon-white. He played frequencies at random over the wall while Fay took pictures.

"Now, Paddy," whispered Fay. "The four."

Paddy set the dial. "Get the number of your film?"

"Yes. Three hundred six through three hundred nine, inclusive."

For a flickering instant Paddy pressed all four switches at once and in that instant the random glowings, lines and loops in the significant square coalesced to form lines of legible characters. They even showed the same pattern as had the other data sheets—two preliminary paragraphs and two columns of figures.

"That's it," said Paddy. "Now—one at a time."

Using each frequency separately, they made four photographs.

"We'll make a few more," said Fay, "and then we'll go."

"Wonder of wonders," said Paddy. "I think we've got it."

When at last they rose above Panshast Ventrals the guardship as before pulled up alongside and the captain requested the camera, the film pack and the ultra-violet projector.

"If the sensor finds nothing wrong," he told them, "you'll have everything back tomorrow." Paddy and Fay flew back to their ship.

**A** GAIN during the morning Fay noted information regarding the dead Shaul Son while Paddy, under the pretext of sealing a leak in the water-line, sought through the ship for spy-cells without success.

During the early afternoon a messenger brought them their prints. Fay fanned them out swiftly—304—305—306—307. All there, clear and distinct. When superimposed they would spell out the Shaul fifth of the space-drive engineering.

"I'm off to Room Twelve," said Paddy. Trotting across the field to the Terminal Building he found Room 12 and recovered their power-arm and keys.

They filled water-tanks, shipped two new energy cartridges. As Almach was dropping for its bath in the Sander evening vapors they took off. Presently Shaul was half of a bright orange globe below.

Paddy sighed. "Fay, I've lost ten pounds. I've—"

"Eh-h," said Fay. "We'd better check the ship for hidden and spy cells." In an hour, while Paddy encouraged her, she found two audio hurons disguised as rivets and a spy cell on the back of a high locker.

"Now," she breathed. "Maybe we can talk—though I still feel jumpy."

Paddy rose to his feet. "And maybe there's time for a little kiss or two."

Fay sighed. "Oh, all right. . . . Now stop it," she gasped. "Stop it, Paddy Blackthorne! You'd never marry a fallen woman and I intend to marry, on honest and legal and make you square the rest of your life, so you behave yourself—until it's legal."

The boat drifted quietly in the great dark emptiness, as remote from the worlds of life as a soul after death. Paddy and Fay sat at the chart table in the observation dome, watching the far stars.

"It's only now," said Paddy, "with four-fifths of it behind us, that I'm getting the jitters."

Fay smiled wryly. She looked tired. Her eyes glowed with an unhealthy brightness, her skin was transparent, her fingers thin, nervous. "That's the way of anything, Paddy. If you're desperate any gain looks good. But now—"

"When I was chained on that little asteroid," said Paddy, "I could think of nothing finer than making off in that beautiful big-domed boat. Sure, I'd take any risk for it. There was nothing for me to lose. Now it's different. I want to live. I've something to live for." He looked at her with a glance that was like striking her hair.

For several minutes they sat in si-

lance. The boat drifted through space at an unknown speed. Perhaps it hung motionless. There was no way of knowing.

Paddy stirred. "See it out there—Marach. It's staring back at us, daring us to come closer!"

Fay's hand trembled. She laughed uncertainly. "It does have a funny look. Like one of the Koten eyes."

Paddy said, "Of all the Langtry races I hate only the Kotens."

"Probably because they've deviated the most."

Paddy shrugged. "I wonder. The Kotens and the Shaals resemble normal men the most of any. The Shaals have their skin cows. The Kotens their saucer eyes."

"It's something beyond their mere appearance. It's their psychology. The Shaals are not too far removed from men. Earthers can understand most of their motives. But the Kotens—they're far far away from any Earther's comprehension. It's as if they were staff of their own twilight world."

"To speak to one you'd say here was the strangest most unique individual possible—a creature that might take to the wilderness to be alone with his own peculiarities. And then when you see them at one of their shoustings—"

"Or at a public torturing, like the time I was with the Christobel Rocket."

Fay winced. "—then they're all the same and you can think of nothing but the rows and rows and rows of big saucer eyes. That's all you see. Acres of eyes as big as clam-shells. And then you know that they're all the same in their oddness."

"Like a race of crazy people. But no," mused Paddy. "I'd hardly call them mad."

"It would mean little if you did. They have so few similarities in common with the root stock."

"Few? There's not any."

"Oh—there are a few. Curiosity—anger—pride."

"Well, that's true," Paddy conceded. "They're a cowardly crew, some of them, and they have those sex festivals."

Fay shook her head. "You're emphasizing the wrong things. Their fear isn't the fear of Earthers. It's closer to what we'd call prudice. There's nothing of panic or fright in it, nothing glandular. And their sex is no more emotional than scratching an itch. Maybe that's their difference—the fact that their glands and hormones play such minor parts in their personalities."

Paddy clenched his fists, shoved out his chin. "I hate the vermin as I hate flies and I feel no more pangs killing Kotens than killing flies."

"I hardly blame you," said Fay. "They're very cruel."

"I've heard that they eat human beings and with relish."

FAY said mournfully, "And why not? Earthers eat pigs and that's about their attitude."

Paddy gritted his teeth. "They inverted the nerve-suit. What more can you say to their discredit?" He ran his fingers through his hair. "I hate taking you out there, Fay, and putting you to the risk."

"I'm no better than you are," she said.

Paddy rose to his feet. "In any case there's only nonsense in frightening ourselves. Maybe we'll have it easy."

Fay read from the last little piece of parchment. "The Plain of Tush, where Arma-Goth shows the heroes to the wandering stars. Under my mighty right hand! Do you know anything about Arma-Goth, Paddy?"

He nodded, turned to stare at the stars ahead. "It's a sort of heroes' memorial in the middle of the plain—'which may not be marred or imprinted on pain of sore death.'"

Fay stared. "And why do you say the last?"

"That's their law. It's a big plate, fifty miles square, I'd say, and as flat as a table. They used a million Armasdan and Kadhis and Earther slaves to lay it out level. There's not a bit of gravel the size of a pea to mar the flat. At the center of the plain are the great statues of all the old Sons. And Sam

Langtry himself sits at the head of the aisle."

"You sound as if you've been there."

"Oh, not me. There's no one allowed near the plain but the Kotoans and few of them. A drunken Shang woman told me about it once."

Fay said dully, "You make it sound difficult."

"If we had an armed cruiser now," said Paddy, "we might drop smash down beside it, shoot up everything but what we wanted, take off before they could get to us."

Fay shook her head. "Not on Koto. There are five satellite forts covering every square mile on the planet. They'd have your cruiser broken and white-hot before ten seconds had passed."

"Oh, well," said Paddy, "I was just talking—letting my mind loose on wild schemes."

Fay frowned, bit nervously at her lip. "We've got to think of something. With four-fifths of the space-drive in our hands we can't allow ourselves to be captured."

"With or without as far as that goes."

They sat in silence a moment. Then Paddy said, "You'll drop me low and I'll parachute into the very center of Arma-Goth. In the dark I'll get our last sheet and I'll come out on the plain. There you'll drop by and pick me up once more."

"Paddy—are you serious?" Fay asked gently.

"Faith and how could I be otherwise? The very thought of the project raises the goose-bumps on my neck."

"Paddy—you're too young to die."

"That I know," Paddy agreed. "That I know." He darted a glance across the gulf toward Mirach. "Especially on the public platform."

"Just getting near the planet is dangerous," said Fay. "The forts detect anything coming down to Koto that's off the regular lanes. They're not free and easy like the other planets. And if we land at the Mantres Field, we'd have to go through that examination again. Except that it probably would be a great deal more thorough."

Paddy pursed his lips. "If luck's with us we could make it past the forts."

"We can't trust to luck," said Fay. "We've got to use our brains."

"It's the old Blackthorn luck," Paddy reminded her. After a moment he added, "Of course it's the Blackthorn brains too, which owns it up."

"Well, was there then?" snapped Fay. "Suppose when I dropped you down you were caught and they tortured everything you knew out of you? All about Delta Trianguli?"

Paddy screwed up his face. "Don't talk so. It takes away my heart for the venture."

"But suppose it happened for a fact? And we lost the four sheets? Then they'd have everything."

Paddy said, "Faith, I believe that if it came to sending poor Paddy out of the nerve-suit or making sure of the space-drive you'd leave Paddy bellowing there like Bashan's Bull."

She inspected him as if from a distance. "Maybe I would."

Paddy shuddered. "Of all the millions of tender-hearted women in the universe it's you I went and picked out for a shipmate, one like the Hag of Muckish Mountains, who sold her man to the devil for a groat."

Fay said coolly, "Control of space means a great deal to Earth. Right now those sheets are hardly safer than if we had them right here in the cabin. Neither one of us can risk being caught."

Paddy drummed the table with his fingers. "Now if we could only get them safe to the right people on Earth there wouldn't be this conflict and uncertainty and doubt between us."

"There's no conflict and doubt as far as I'm concerned," said Fay with a trace of bravado. "I love my life and I love you—no, now keep away from me, Paddy—but I love Earth and the old continents and oceans and the good Earth people more."

"You're an awful hard woman," said Paddy. "You're one of those fanatics."

She shrugged. "I don't think so at all. You feel the same way if you'd only



stop and put it into words."

Paddy was not listening. He rubbed his chin, frowned. "Now I wonder—"

Fay said, "The Langtry ships around Earth are like bees around a honeycomb. Just hoping someone will try to smuggle the sheets to Earth."

"If we could only learn the information in on the space-wave."

"They'd jam us—and if we kept trying too long in one spot they'd triangulate and run us down." She rose and rubbed her hands nervously on the seat of her slacks.

"There's still another chance," said Paddy. "Colonial Express, to Earth Agency."

"Hrrmmmmph. You're out of your mind."

PADDY reached for the Astral Alarm. "Not so fast, not so fast," he muttered. "The Blackthorn brain is a wonderful thing." He licked his finger, turned a page, searched down a column. "Pshaw! No deliveries being made this year."

"Will you stop being cryptic long enough to tell me what you're looking for?"

"Oh," said Paddy. "I thought there might be a comet cutting in from outer space close to Earth. Then we could include the sheets as part of the baggage. But there's nothing listed, nothing for another eight months."

Fay narrowed her eyes thoughtfully, said nothing. Paddy shrugged. "I guess we take our chances. There's still that old Blackthorn leak."

Oyster-white Koto hung below, Koto the twilight-planet.

"It's a frightening place," murmured Fay. "So dim and dark."

Paddy snuggled a confident laugh and was surprised at the shrill sound which left his mouth. "Now then, Fay, it'll go fast. One, two, three—down, up, off again, like old Finnigan at Bantry Station."

"I hope so, Paddy."

"Now we'll wait till those forts are spaced just enough to chance dropping our boat through."

Fay pointed. "There's a big hole out there over the Cal-Lar Quadrant."

"Down we go," said Paddy. "Now pray to Saint Anthony if you be a good Catholic—"

"I'm not," snapped Fay, "and if you'll give more mind to the boat and less to religion we'll gain by it."

Paddy shook his head reproachfully. "If old Father O'Toole would hear you, how he'd tat-tat-tat. Turn off the lights then and close the field on the cowcatcher if we want to help our chances."

Koto bridged across their vision. "Now!" said Paddy. "Off with all power and we fall like a dead rock and hope they're not too vigilant in the forts."

Ten minutes, twenty minutes passed. Silent and tense they sat in the dark cabin, their pale faces lit by the reflected glow of Koto.

The horizons spread, they felt the cushioning crush of air below them.

"We're past," breathed Fay. "We're down. Turn on the power, Paddy."

"Not yet. We'll get clear down into the traffic lanes."

The twilight surface of Cal-Lar Steps rushed close. "The power, Paddy! Do you want to crash?"

"Not yet."

"Paddy! Those trees!"

A quick gust of power, a wrench of the rudder—the boat swooped belly-down, only yards from the surface, and charged hedge-hopping across the plain.

"Now then," said Paddy cheerfully, "and where's Arma-Geth from here?"

Fay pulled herself up into the seat. "You reckon that?"

"The lower we go, the safer," Paddy told her. "And Arma-Geth?"

SHE looked at the chart. "Magnetic compass one hundred fifty-three. About a thousand kilometers. There's a rather large city—Dhad—in our way. The traffic regulations for Koto—let's see." She flipped pages in Traffic Regulations of All Worlds, "Fourth level for us. Speed, two thousand KPH. If I were you I'd swing around Dhad."

Paddy shrugged. "On the fourth level we're just as safe over the town as over the country. Maybe safer if anyone has reported a strange space-boat."

Ithad swung below, a low city of flat wide roofs, glowing pearl-colored in the darkness, and presently was left behind. They crossed a range of mountains, rose to dodge Mt. Zecash, a perfect cone eight miles high, slanted down across the Plain of Tish.

They dropped low, hovered, strained their eyes through the darkness. Paddy muttered, "It must be close."

Fay rose, "I'll try infra-red." A moment later, "I see it—about ten miles to the left. It looks quiet. You can drop down a little—there's nothing below us."

With the skids almost dragging Paddy edged the boat toward Arma-Geth.

"About three miles," said Fay. "That's close enough. We don't know how well it's guarded, or even if it's guarded at all."

Paddy set the ship down and the solid vibrationless ground felt curiously still, dead, silent, after the dynamic flight-motion of the boat. Throwing open the port they put out their heads, listened. No sound, except for a soft distant chirring of insects. Three miles ahead, black on the gray luminescence of Koto's sky, rose a confused group of silhouettes.

"Now," said Paddy thickly, "my tools, my gun, my light. I'll be out there and back in less time than you'll know."

She watched him strap on his equipment. "Paddy—"

"What now?"

"I should be coming with you."

"Perhaps you should," Paddy agreed easily. "And if so I'll come back for you. But right now it's only a reconnaissance I'm making and you're the rear guard. Unless of course the stuff is there for the taking, so ridiculously easy that I can't resist it."

"Be careful, Paddy."

"Indeed I will, you can count on it. And you mind for your own safety. Be ready to jump if it gets dangerous. If there's any shooting or disturbance—don't wait for me."

He dropped to the ground, stood listening. *Chirr, chirr, chirr*—a sound like a billion tiny bells.

Paddy started briskly for the silhouette, treading the smooth swept surface of the plain. The silhouette grew, towered past the gray afterglow, loomed up to the stars. There was no sound, no hint of movement, no light. More slowly he advanced, ears and eyes like ferrets.

He came to a stone wall, solid and moist, high as his head. He felt along the top, grasped the edge, hauled himself up. He was on a great stone pavilion. To either side rose dark statues—the Koto Sen of Langtry, row after rigid row, conventionalized, sitting in low chairs, staring with wide mother-of-pearl eyes across the sacred Plain of Tish.

Paddy sat a moment quietly, listening, every nerve in his body alive, groping for sensation. He rose to his feet, moved across the stone to the nearest statue. Where was the latest? Logically it should be the last statue of the series at the end of a row.

He felt along the base of the statue nearest him, looked along the sides, saw in faintly luminescent letters—*Lafery, 17th Sen of Langtry*. Following it was a series of dates and ceremonial phrases.

He must be close, thought Paddy. The late Sen was the nineteenth of the line. To his ears came the shuffle of footsteps on the stone. He clapped his hand to his gun, froze.

A pair of dark figures passed thirty feet away. There was the milky flash of great night-seeing eyes and they were gone. Had they seen him? Paddy pondered. They had seemed neither surprised nor startled. Perhaps they had mistaken him for a devotee. Best to make haste in any event.

He moved to the next statue. *Golpack, 18th Sen of Langtry*, read the plaque.

To the next. *Ladha-Kada, 19th Sen of Langtry*. Here was his goal with the 20th seated under the right hand. The hand lay on the knee, palm downward. Paddy looked up. Twenty feet. He took

a last look around. No sight, no sound, no one to watch for thieving intruders.

HE set his torso in a cleft, heaved himself up on the pedestal. The shuffle of steps—Paddy staggered against a pillar of the great chair. The sound passed.

Heart thumping Paddy hauled himself up the side of the chair into Ladda-Kuth's lap. Above loomed the stern fish-eyed face of the man he had killed and in Paddy's excited brain, the mother-of-pearl plates that were the eyes seemed to stare down accusingly.

Paddy grimaced. "Now's the time for the benches to howl if ever he's going to. Ah, bless the Lord, may the creature's ghost still prove the asteroid where he was killed."

Paddy crawled out the right leg to the hand, felt the stone fingers. "Now how will this be?" thought Paddy. "Will they raise up only-like or will I want a charge of javan-powder to lift the hand away? First we'll try my bar."

He unlocked the pry-bar from his belt, pushed it under the hand, applied force. Snap! The ball of the thumb broke off, fell clattering to the pavement.

Paddy crouched, tingling all over. No sound—he felt at the fractured part, sensed the beginnings of a cavity. Bringing up his flashlight, he directed the faintest whisper of light possible at the broken spot. A cavity it was and Paddy eagerly pried the bar.

A stern voice came from below. "What are you doing up there? Come down or I'll pick you off with a beam."

Paddy said, "Right away. I'm coming." He reached into the cavity, pulled out a metal box, shoved it into his pouch.

"Come down!" said the voice. "By the justice of Koto come down!"

Paddy slowly crawled back to Ladda-Kuth's lap. Trapped, caught red-handed—how many of them were there? He peered toward the pavement but could see only darkness. But they could doubtless see him well with their big twilight eyes.

He let himself down the leg of the chair. If he could only see. He snatched

out his light, flashed it along the ground. Three Kotons—uniformed, guns at ready—and they were dazed. Paddy shot them—one, two, three—left them thrashing on the stone. He jumped down, lit with a jar, rose, raced to the edge, dropped over to the Plain of Think.

He paused an instant, listened. He heard his own panting. The darkness bulked heavy with menace but he dared not use his flash. Above him he heard movement, staccato voices, sounds of anger.

Crouching he scuttled off across the plain. At his back came a shrill whistle and over his head he heard a throb, a hum.

Paddy dived, ran with mouth open, eyes staring into the gloom. Oh, to be in the ship! Pay, Pay, have the port wide!

A thud ahead of him, a swarm of figures. Paddy shot wildly, kicked, punched. Then his gun was wrenched away and his arms seized.

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## CHAPTER XX

### Strawn Throat

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ANYWHERE was no talk. With swift efficiency they trussed him with many folds of sticky tape, rolled him onto the floor of the air-boat. It rose, took him through the sky.

Night closed. The dim twilight that was Koto's day stole upon them like cool water. Paddy lay on the floor between two benches. Four Koton guards watched him with quiet expressionless eyes.

The boat landed. They laid hands on him, bore him across a flat concrete floor, down a ramp, across a square. Paddy glimpsed a tall spidery structure off in the distance, knew it for the Montreal Traffic Control. He was in Montreal.

Kotons moved past without interest and a small party of Alpheratz Eagles craned their necks. The Kotons walked

with an odd loose-kneed gait like stammering mimicking secrecy. They had thick pale hair, growing straight up like candle flames. The soldier class wore their hair shorn on a plane an inch above their heads and one man on Koto shaved his head—the Son of Langtry.

Across the square to a large black-walled building Paddy was carried and here the party was joined by other guards in short black uniforms cut and scalloped in eccentric half-moons.

They took him through a dark hall, smelling of carbolic acid, into a room bare except for a table and a low chair. They laid him on the table and departed, leaving him by himself. He sweated, tapped, wrrenched mightily at his bonds without success.

A half-hour passed. A Koton in the regalia of Councillor to the Son entered the chamber. He stopped close to Paddy, peered into his face.

"What were you doing at Acrom-Goth?"

"It was a bet, your Honor," said Paddy. "I was after a morning to show my friends. I'm sorry now I committed the misdeed, so if you'll untie me I'll pay the fine and go my way."

The Councillor said to a corporal behind him, "Search this man."

He looked at Paddy's equipment, picked up the metal box, glanced at Paddy with opalescent fire in his eyes, turned, left the room.

An hour passed. The Councillor returned, halted beside the door with a bowed head. "Zhor Khadaga," he announced. The guards bowed their heads.

A Koton with a polished bald head entered the room, swung across to Paddy.

"You are Blackthorn the assassin."

Paddy said nothing.

The twentieth Son of Langtry put a quiet question. "What have you done with the other material?"

Paddy swallowed a lump in his throat the size of an egg. "Now, my lord, let me loose, and we'll talk the situation over as one man to another. There's rights and wrongs to everything and maybe I've been overhasty time and again."

"What have you done with the rest of the data?" asked Zhor Khadaga might as well tell me. It will be you or your planet any more good now we possess a crucial segment of the information."

"To be perfectly frank, Your Honor," said Paddy ingenuously, "I never had anything else."

The Son turned, motioned. From a cavity in the wall they pulled a machine that looked like a heavy suit of armor, lifted Paddy, laid him inside. One bent down, deftly taped Paddy's eyelids open, then the cover was closed on him. Instantly every inch of his skin began to tingle faintly as tiny fibrils sought and joined to each of his nerve-endings. In front of his taped-open eyes a hemispherical screen glowed.

HE saw moving shapes, a dingy flickering of low dross. He was looking into a stone-walled room with a slatted floor. Ten feet away a man stood limpaled. Paddy heard his screaming, saw his face.

The guards turned, looked at him with great black eyes. He saw them reaching, felt their hands, the actual clutch at his wrists, under his knees. It was reality. The fact of the screen had left his mind.

They knew the art of stimulating numb minds. They had perfected torture to the ultimate. Past-thought pain might be inflicted time and again with no harm to heart or body. A man could live his entire life in sensation.

And presently the operators would know their subject. They would discover how to gruel out his sickest shrieks and the pattern would be elaborated, adjusted, embroidered to a delicate vortex.

Time would become elusive, the world would be vague and strange. The present would be reality and reality would be the dream.

A voice gonged at Paddy. "What did you do with the other data?"

It was a sound from a tremendous broken throat, without meaning. Paddy could not have answered had he wanted to.

**A**FTER a period the question was no longer asked and then it seemed. If the torture had become meaning-

Paddy emerged from quiet suddenly with a clear vision. The face of Zari Khalinga looked down at him.

"What did you do with the remaining data?"

Paddy licked his lips. They wouldn't trick him. He'd die first. But there was the rub! This kind of torture didn't let a man die. One twentieth of such treatment would kill a man were it fixed on him the normal way! Here they could torture him to death as many times as they chose and bring him back fresh and sound, nerves tingling and keen for the next session.

"What did you do with the other data?"

Paddy stared at the pale face. And why not tell them? Space-drive was lost to Earth in any event. Four-fifths was as bad as none at all.

Paddy grimaced. Suggestion from without. It must be, since this was the Son's own argument. Pay! He wondered about Pay. Had they caught her, had she got away? He tried to think but the nerve-suit left him little leisure.

"What did you do with the other data?"

Zari Khalinga's head was close, his eyes dilated, and his face was like a death's-head. The eyes dwindled, expanded again. Wax, wane, swell, subside. Paddy was having visions. The air was crowded with old faces.

There was his father Charley Blackthorn, waving a cheery hand at him, and his mother, gazing from her rocking chair with Dan, the coffee, at her feet. Paddy sighed, smiled. It was beautiful to be home, breathing the turf smoke, smelling the salt fishy air of the Skibbereen wharves.

The visions flitted and danced, swept past like the seasons. The jail at Akthabai, the asteroid, the two dead Sons of Langtry. A quick flitting of scenes like a movie run too fast. There now, something he recognised—Spade-Ace. The doctor and Pay—Pay as he had first

seen her, a small dark-haired imp of a girl. And beautiful—ah! so beautiful!

The grace in her movements, her lovely dark eyes, the fire in her slender body—and he saw her dancing at the Karmaborgian Arrowhead, her rounded little body as soft and sweet as cream. And he had thought her plain!

He saw her with her golden hair, with the new arch side-glances she had begun to give him. But now her eyes were full of bright anger and pity.

"What did you do with the other data?"

The wraths departed regretfully. Paddy was back in the bare room with the Koten Son of Langtry, who wanted to know the secret of space-drive, the secret his grandfather twenty times removed had stumbled upon.

Paddy said, "Ah, you ghoul, do you think I'd be telling you? Not on your life."

"You can't resist, Blackthorn," said the Son mildly. "The strongest will break. No man of any planet can fight indefinitely. Some last an hour, some a day, some two days. One Koten here stayed two weeks and held his tongue. Then he spoke. He babbled, craving for death."

Paddy said, "I suppose you gave it to him then?"

Zari Khalinga made a quick quivering motion with his mouth. "Then we took our revenge on him. Oh, no. He still lives."

"And when I speak—after that you'll take our revenge on me?"

Zari Khalinga smiled, a ghastly grin that affected Paddy's viscera. "There is yet your woman."

Paddy felt flat, buffeted, overpowered. "You've—caught Pay then?"

"Certainly."

"I don't believe it," said Paddy weakly.

Zari Khalinga tapped an upright tube on the table with his shiny blue-gray fingernail. It rang. A Koten in a yellow breech-cloth scuttled into Paddy's range of vision. "Yes, Lord, your magnificent commands."

"The small Earther woman."

PADDY waited like a spent swimmer. Zeri Khalnga watched him carefully for a moment, then said, "You have a projective identification with this woman?"

Paddy blinked. "Oh, now? What are you saying?"

"You 'love' this woman?"

"None of your business."

Zeri Khalnga made play with his fingernails on the table-top. "Assume that you do. Would you then allow her to suffer?"

Paddy said quietly, "What would be the difference since in any event you'll torment us till you tire of the sport?"

Zeri Khalnga said slyly, "Not necessarily. We Kotonns are the most direct of all intelligences. You have put me in your debt by killing my father, thus setting me free to shave my head. Life and death are mine. Now I have over-power. I rule, I direct, I envision."

"Already two hundred of my jealous brethren are stacked in the Cairn of South Thinkers. If you helped me to sate knowledge of the space-drive over the false Sons from Shual, Bodan, Alpheratz and Loristan—then there would be an unbalance indeed."

Paddy said, "Now butter won't melt in your mouth, I don't understand you. You are bargaining with me? What for what? And why?"

"My reasons are my own. There is dignity to be considered."

"And haste?" suggested Paddy.

"Haste—and you might lose your memory. That is common when a man has too long in the nerve-suit. The imagination begins to intrude upon fact and present information is untrustworthy."

Paddy chuckled a wild laugh. "So we've got you in a corner! And your nerve-suit won't get you your bacon after all. Well, then, old owl, what's your bargain?"

Zeri Khalnga stared expressionlessly across the room. "On the one hand you may return to Earth, with your woman and your space-vessel. I crave the death of neither of you."

Zeri Khalnga flicked with the back of

his hand. "Negligible. Riches, money? As much as you desire." He flicked again. "Negligible. Any amount and will not say no. That on the one hand. On the other—"

A sound interrupted him. Paddy turned his head sharply. It came from a nerve-suit which had been quietly rolled into the room—a cry of desperation, contralto, aching, lost.

"That," said the Son of Langtry, "is your woman. She is experiencing unpleasantness. That is the alternative—for both of you. Forever and ever for all your lives."

Paddy struggled to rise but was afflicted by a strange weakness as if his legs were muzzled with loose string. Zeri Khalnga watched attentively.

Paddy said hoarsely "Stop, it, you devil—you devil!"

Zeri Khalnga made a sign with his hand. The Koton in the yellow breech-cloth snapped down a bar. A sigh, a snap came from within.

"Let me talk to her," said Paddy. "Let me talk to her alone."

Zeri Khalnga said slowly, "Very well. You shall talk together."

## CHAPTER XIII

### We Are Alone

"FAY, Fay, Fay!" cried Paddy. "Why didn't you leave the wretched world when you had the chance?"

She smiled wanly. "Paddy, I couldn't leave you, I knew I should. I know my life was more important to Earth than to you. I know all the things that the Agency drilled into me—but still I couldn't leave without trying to help. And they trapped the ship."

They stood in a wide concrete hall, a hundred yards long, high-ceilinged, illuminated with a glow that seemed blue and yellow at the same time, like strong moonlight.

Paddy looked in all directions. "Can they hear us now?"

Fay said dully. "I imagine that every sound we make is amplified and recorded."

Paddy moved close, and said softly into Fay's ear, "They want to trade as our lives."

She looked at him with wide eyes that still held traces of terror. "Paddy—I want to live!"

Paddy said between his teeth. "I want you to live too, Fay—and me with you."

She said desperately. "Paddy, I've thought the whole thing out. And I don't see what we gain by holding our tengons. The Kotans will get the space-drive—but what then?"

"Earth wouldn't have it in any event since we've got only four fifths. And the four fifths"—she breathed in his ear in a whisper as low he could hardly hear—"I can dictate from memory."

"From—" Paddy gasped.

"Yes. I told you once I was trained for that."

"Think."

Fay said softly. "If we were able to keep silent no one would have space-drive. In ten years there'd be no more star travel. On the other hand, if we told what we know—and if we can get back to Earth—then Earth will have as much as we have now."

"Which is as good as nothing," Paddy said bitterly. "Of the thirty numbers you only know twenty-four. Twenty-four dial-settings."

He paused, blinked. A picture came into his mind from a part that seemed remote as ancient Egypt. It was the interior of the manifolding shop on Akhabata, where the five Seng came to curl power into the tungsten cylinders. Five panels, each with three dials.

"Fay," said Paddy, "I'm not fit to live."

She looked at him in alarm. "What's the matter?"

Paddy said slowly. "I see it all now and I see it clear. We've been abused fools. I've been the worse one. Now on these sheets"—he leaned to her ear—"remember the duplications?"

"Oh, Paddy!"

He said, "When I broke into that shop

on Akhabata I saw a curling machine. There were fifteen control knobs. These data sheets show six readings to a sheet—thirty in all. Does that mean anything?"

She nodded. "There are duplicates of the numbers too. Paddy—we had it all!"

"All of it," said Paddy. "We didn't need to come to Koto any closer than the Southern Cross."

Fay winced.

"We've got to get away," said Paddy with great energy. "Somewhere. Because in that little cap of yours you've got space-drive."

Fay shook her head sadly. "They won't let us go, Paddy. Even if we tell everything we know they'd still kill us."

"Not till we'd blown the fuses in all their nerve-suits."

"Oh Paddy! Let's think—think!"

They thought, Paddy said. "He's hot after us, that Zhri Khatings, he's got the wind up. But why? Maybe word has got out to the other planets that he's caught us and all the spies and agents and secret services are going into action and he doesn't want to chance our holding out till the others get to see us."

There was a moment of silence. "Think," muttered Fay.

"Listen here," said Paddy. "We'll tell him that you'll go out to get the sheets and I'll stay as a hostage. Then you go to Earth and we'll spring the news that we know all there is to know about space-drive. Then you buy me back for twenty space-drives more or less."

"At the going rate," said Fay dryly. "That's twenty million marks. Are you worth that much?"

"That's the best I can think up," said Paddy. "There's no other way of getting us both out alive and the drive to Earth."

"Zhri Khatings won't like it," said Fay. "He'll want us to trust him. After he gets the sheets—then he turns us loose."

"I wonder," said Paddy.

"What?"

"Could it be that he'd agree to all of us going? We'd take him to you-know-where alone—and there we'd switch."

Fay said breathlessly. "It would be fair that way and he'd be getting the quick action he seems to want. Let's ask."

**S**TEPPING gingerly past the reared crew members, conscious of the eager-colored gaze, Paddy and Fay entered the familiar cabin which had taken them so far.

Zhri Khainga followed them, the port was slammed shut, they were cast adrift from the mother ship. Paddy and Fay stood stiffly, silently by the control deck; Zhri Khainga took a seat back in the cabin and leaned back at his ease.

"Now," he said, "I have complied exactly with your conditions. Here is your space-boat—we are alone. Take me to the hiding place of the data. I will call my own vessel, you may leave me and go your way in friendship. I have done my part. See to it that you keep good faith."

Paddy looked at Fay, rubbed his nose uneasily. "Well, now, to tell the truth, we'd like to look the ship over. Some of your men—by mistake, I'm saying—might be asleep in the bilges or checking stores in the forward locker."

Zhri Khainga nodded. "By all means satisfy yourselves. In the meantime," he turned to Fay, "perhaps you will put your ship on course."

Wordlessly Fay climbed up into the seat, threw the boat into space-drive and the vessel which had brought them from Kote twinkled an enormous distance astern.

Paddy came back. "Nothing," he grumbled. "Not hair nor hide."

Zhri Khainga nodded his head cordemically. "It troubles you that I keep to the terms of the bargain?"

Paddy muttered under his breath. Fay sat looking into the blank outside the port. Suddenly she pulled back the space-drive arm. The boat surged and sang into normal continuum once more. "Look outside, Paddy," she said. "Around the hull."

"That's it," said Paddy. He pulled an air-seat from the rack, stepped in, slipped up the seam, set the bubble on

his head while Zhri Khainga watched without words.

Paddy vanished outside the lock and Fay waited beside the controls, covertly eyeing the Koton, trying to fathom the web of plot and plan below the dome of the shaven pate.

"I am thinking," said Zhri Khainga, "of great deeds. The wealth of any imagining shall be mine. I will give a quadrant of the planet to the plain of Arma-Goth—it shall be extended.

"Mountains will be leveled, the plain will be floored with black glass. So shall the statues dwell in the opulent allience and there will be my magnificent entiry among them. I shall be magnified a thousand times. For all eternity will I tower—mine will be the life-loved pivot of history."

Fay turned, looked out through the port. Where was Sol? That fated star? Perhaps.

Paddy entered the ship. Another figure followed him. In the bubble Fay saw the great-eyed head of a Koton.

"This is what I find strapped to the hull. Do you call that subscribing to our proposals?"

Zhri Khainga sat upright. "Quiet now, little man! Who are you to challenge my wishes? You should be glorying in your fortune, that you give freely what otherwise could be wrang from your lips." He sat back in his chair. "But now—we are committed."

The Koton who had entered the ship with Paddy had not moved from his first position. Zhri Khainga waved his fingers. "Out. Fly through space with your hands. You are not needed."

The Koton hesitated, looked up at Fay, back at the Son of Langtry, slowly turned, let himself out the lock. They saw him push himself away from the ship and drift off alone and hopeless.

"Now," said Zhri Khainga, "are you satisfied? We are alone. To the hiding place. Please be swift. There is much of importance awaiting my pleasure throughout the universe. Note that my gun is at hand, that I shall be alert."

Paddy slowly joined Fay on the control deck. "Go on, Fay. Set the course."



**DELTA TRIANGULI** shone far and cold to the left. The dull black planet bulked below. Zbri Khainga, at the port, said, "Delta Trianguli Two; am I right?"

"You are," said Paddy shortly.

"And now where?"

"You'll see in due course."

Zbri Khainga wordlessly sented himself once more.

Paddy went to the transmitter, sent out a call on the frequency used in the air-suit head-sets. "Hello, hello."

They listened. Faintly came, "Hello, hello," out of the receiver.

Zbri Khainga moved uneasily. "There are others here?"

"No," said Paddy. "None but us. Did you get the line, Fay?"

"Yes."

The dead face of the planet passed below—plain flat and dull as black velvet, the pocked mouth of mountains, which looked as if they had been dug by monstrous moles. Dead ahead rose an enormous peak.

"There's Angry Dragon," said Fay.

She set the ship down on the plain of black sand. The hum of the generator died, the ship was still.

Paddy said to the still-sented Son of Langtry, "Now listen close and don't think to trick us, for sure you'll never win by it. You might get our lives but you'd never hold the four sheets for your own."

The Koten stared unblinking.

Paddy continued, "I'm going out there, and I'm going for the sheets. They're well hid. You'd never find them."

"I could have a hundred thousand slaves on this spot next week," observed the Koten tonelessly.

Paddy ignored him. "I'll get the sheets. I'll lay them on that bit of black rock out there. Fay will stay here in the ship. When I set them down you'll call your ship, tell them where to come for you, where to pick you up."

"Then you'll get in your air-suit and come toward me and I'll leave the sheets and go to the ship. When we pass each other you'll put down your gun and go

on. I'll continue toward the ship and so we'll take our leave. You'll get the sheets and in a day or so your ship will be here to take you home. Is that agreeable?"

Zbri Khainga said, "You allow me little scope for tricking you. You are strong and muscular. When I put down the gun what is to prevent you from attacking me?"

Paddy laughed. "That little poison ball-whip you carry along your arm. That's what I'm afraid of. What's to keep you from attacking me?"

"The fact that you can outdistance me by running, and thus regain your boat. But how will I know that you are not giving me bogus data sheets?"

"You have binoculars," said Paddy. "I'll hold the sheets up for your inspection and you can watch me put them down. They're unmistakable—and with those binoculars you can read every bit of the text."

"Very well," said the Koten. "I agree to your conditions."

Paddy slipped into his air-suit. Before setting the bubble over his head he turned to the still-sented Koten, "Now this is my last word. By no means try to trick us or catch us off guard."

"I know you Kotens are devils for your revenge and your tortures and that you love nothing better than black-handed treachery—so I'm warning you, take care or it will go ill with you and all your hopes."

"What is your specific meaning?" inquired the Koten.

"Never mind," said Paddy. "And now I'm going."

He left the ship. Fay and the Koten could see him through the dome, marching across the black sand toward the peak. He disappeared into the tumble around the base.

Minutes passed. He reappeared and Fay saw the glint of the golden sheets.

Paddy stood by the black rock, held the sheets up, face toward the space-bust. Zbri Khainga seized his binoculars, clamped the funnel-shaped eyepieces over his eyes, stared eagerly.

He put down the binoculars.

"Satisfied?" asked Fay briefly.

"Yes," said the Koton, "I'm satisfied."

"Then call your ship."

Zhri Khaiinga slowly went to the space-wave transmitter, snapped the switch, spoke a few short sentences in a language Fay could not understand.

"Now, get out," said Fay in a voice she could hardly recognize as her own. "You keep your part of the bargain, we'll keep ours."

"There is much yet unsaid," the Koton murmured, "The tale of your insolence, your detestable audacity."

Fay's body surprised even herself. Without conscious volition she sprung at Zhri Khaiinga, snatched the gun. It was here, Clurkey now, juggling it, fingers shaking, she jumped back. Zhri Khaiinga gasped, leaped forward, flung out his arm, Peljeen-filled balls on elastic strips twisted an inch from Fay's face.

"AAAA!" she cried. "Get out, now—get out! Or I'll kill you and gladly!"

## CHAPTER XIV

### Air in the Cabin

FAYRI-KHAIINGA, his face a strange old pearly lavender color, assumed his air-suit. Menaced by his own gun, he backed out of the boat.

Paddy had been waiting. Now he stepped forward and the Koton ran out to meet him, bounding, hopping, peculiarly agile.

Paddy met him halfway. He passed, expecting the Koton to throw down his gun. The Koton ran past, asking for the golden sheets. Paddy hesitated—then, seeing no gun at the Koton's belt, turned and ran for the boat.

Fay let him in. Paddy pulled off the head-hubble, looked at Fay's tense white face. "What is it then, Fay?"

"There's no power."

Paddy's shoulders sagged and his hands passed at the zipper of the air-suit. "No power?"

"We're marooned," she said. "And that Koton ship will be here in a few

days—maybe less." She stepped up on the deck, looked out the dome toward the Angry Dragon. "And Zhri Khaiinga is waiting."

"Och," muttered Paddy. "We'd walk out across that black sea and give up our breaths first." He joined her on the control deck. "Are you sure about that power now? I was fooled once myself." He tried the controls. They were dead.

Paddy chewed his lip. "That villain worked some sort of relay switch into the drive, that would cut off our energy once we landed. And how he must be gloating!"

"Now he's got the sheets," said Fay. "and he can hide from us until his ship comes. We could never find him."

"It's like we're like, on a sinking ship. Try the space-wave, Fay! Send out a call."

She slipped the switch. "Dead!"

Paddy shuddered. "Don't be using that word so much." He paced two steps across the deck to port, four steps back to starboard, back to the center, of the cabin. "Now try the anti-gravity. That's on its own special unit and there's no connection."

Fay slid the metal boxes. Their weight left them.

"Now," crowed Paddy, "at least we'll leave the planet for the surface will rotate away from under us."

"Zhri Khaiinga will see us leave," said Fay. "He'll know what we're doing and he'll find us as easily as if we were crawling on our hands and knees in the snow."

Paddy reached out, seized a stanchion, squeezed it. "If this were only his neck," he said between his teeth. "I'd hang on while his head pounded on the deck and laugh in his face."

Fay laughed weakly. "This is no time for day-dreaming. Paddy dear." She looked out the port. "We've already risen about a foot from the ground."

Paddy narrowed his eyes thoughtfully. "I know how to get a kick out of those tubes. I'll cost us a million marks and I'll give us a nasty jar, since there's no counter-gravity to the acceleration—but we'll do it."

"Do what, Paddy?"

"We have four drive tubes on this little hull. There's lots of energy curled up and slumbering inside each one of them. Now if we let that energy come whirling out the after and we'll go forward. Of course, we'll ruin the tube."

"Do you know how, Paddy?" Fay asked doubtfully.

"I think I'll just shoot the end of the tube loose and it'll be like breaking open a fire-hose." He looked out the port. "Now we're six feet off the ground—and look! there's that Koton! See him! Sitting there as calm and ma-

de!" She looked through the hull's-eye in the lock, heart in her mouth.

Paddy lay crumpled, unconscious. The bubble around his head was cracked; air was whistling out—vividly, as the water-vapor condensed to fog. Blood was trickling from his nose, spreading along his face.

"Paddy!" cried Fay as if her soul were dissolving. She could not close the outer door as his leg hung out, twisted at an odd angle. She could not open the inner door lest she lose all the air inside the ship.

She bent her forehead into the palms

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jestle as you please laughing at us. Here give me that gun, I'll make a Christian of him—and I'll shoot off our tube at the same time."

He snatched the bubble back over his head, slipped into the lock, opened the outer port. Shri Khatana quickly ducked behind a rock and Paddy regretfully held his fire. He turned, braced himself, drew a bead on the tip of the lower tube, gritted his teeth, commanded himself to his natal saint and squeezed the trigger.

The tube split, an instantaneous spurt of blue flame lashed out, smote the ground. The boat lunged ahead, up at a start.

Fay painfully got down from the elastic webbing, ran to the port. "Paddy,

of her hands, whimpered. Then rising, she ran to the air-suit rack. One leg—both legs—slip up the side—head-bubble, two snaps. She ran to the lock, tugged it open against the inner pressure and the blast of air nearly flung her out into space.

She caught hold of Paddy's arm, pulled his weightless body in against the dying current of air.

"Paddy," whispered Fay. "Are you dead?"

THERE was air in the cabin, warm clean air. Paddy lay on his back, one leg in a splint, a bandage around his head. Fay sat mopping at the trickle of blood which seeped from his nose.

Paddy sighed, shook in a delirium.

Fay gave him a third injection of vivect-881, and spoke to him soothingly in a voice soft as summer grass.

Paddy gave a sudden jerk, then sighed, relaxed. Fay bent over him. "Paddy?" He breathed, he slept.

Fay arose went to the port. Delta Trianguli was a small cold ball of light astern, the planet inconspicuous among brighter stars.

Three days passed. There had come no cruising shark of a Koton ship. Perhaps they were safe. Perhaps Ziri Khalinga preferred the thought of his golden sheets to revenge.

Paddy awoke on the fourth day. "Fay," he muttered.

"Yes, Paddy dear."

"Where are we?"

"We're safe, Paddy, I hope."

"Still no power?"

"Not yet. But I found what happened and we can fix it as soon as you get well. I'm trying to pull it apart—a barrier that was shorted and fused. It made a terrible mess."

Paddy lay still a moment. His face twitched, his mouth pulled up at the corners in a grimace. He said, as if to himself, "Whatever happens, it's the Sen that did it to himself and his own people. It was his own treachery his own fault, and none of mine. . . ."

Fay bent over him anxiously. "What do you mean, Paddy?"

Paddy muttered, "I planned all the time to tell him, since I'm no murderer, before he ever used the sheets."

"What did you do?"

Paddy sighed turned his head away. "There's a wealth of destruction in a dot, Fay—a little dot."

Fay peered at his face. Was he asleep? No.

"Paddy, what are you talking about?"

"Fay," said Paddy weakly, "the space-drive has been my fascination ever since I first heard about it and it's like to be my death—twice, three, four, a dozen times. And one of the times was on Akhabata, where in my ignorance I thought I could burrow into the manifold shop and curl them out by the dozen."

"I found that it wasn't so simple but a very delicate matter. Power floods into the tube from one end and there's fifteen coils and they pound it and knead it and bend it and curl it like a big kick-hammer."

"When all the strengths are just right that great energy snarls and fights but it winds around on itself and there it stops—a tight little core of space-warp. But if one of the coils is off, then there's a weak spot and all the energy breaks out and knocks the world apart."

"When I tried my hand at it on Akhabata there wasn't any power in the line except a bit of static charge but the kick nearly blasted away the shop."

"So?" asked Fay breathlessly.

"So—when Ziri Khalinga, the Koton, pulls the switch—all hell will break loose."

"But Paddy," whispered Fay, "why? Those were the sheets we got from the dead Sen."

"There's two little decimal points that make the difference, Fay. Two little dots. On the Badua and the Loriatua sheets, the duplicated numbers, I had just time for it. Two little marks."

SHE straightened from her bent position, looked away.

"It was to be our ass in the hole," said Paddy. "Sure I'd have told him about it over space-wave once we got clear away because I'm no hand for the killing, Fay. But now whatever happens is through himself since he cut off our power and it's his hand back."

"It's the ninth day, Paddy," said Fay.

"Humph. Two days for the ship to pick him up, four days back to Mentree, three days. It should be time for news."

He turned on the receiver, functioning feebly from the power of the cell in his dash-light.

A Shual spoke, and they strained their ears to hear.

"Atisaka—word from Ziri Khalinga, Son of Langtry from Koto. Paddy Blackthorn, the convict and assassin, has been killed on a dead-planet hide-out by a Koton patrol-ship. No further details have been released. Thus the

greatest merchant in the history of space comes to an end and interstellar traffic returns to normal."

"Is that all then?" Paddy asked pettishly. "Merely that I'm dead? Sure that would be no news to me were it true. I'd be the first to know it. Are there no explosions, no disasters? Is Zhai Khingpa so cautious that he doesn't trust the data of his father and his unhealthy uncles? Why does he wait then?"

"Hush, Paddy dear," said Fay. "You'll excite yourself. Let's get back to our work. In another day we'll be repaired and send a warning message."

"Och," said Paddy. "The suspense is killing me. Why doesn't he drop the other shoe?"

EXCLAIMED Paddy. "The news. Fay, it's time for the news."

Fay wiped her face with a greasy hand. "If you'd wait ten minutes we'd be done. There's just the clip and welding on that gang-switch. And then we'd hear the news on ship's power."

Paddy limped unheeding to the receiver and the thin whistle of space-wave sang through the cabin. Then, gong, gong, gong! rang the speaker—deep doleful sounds.

"Disaster!" cried the Shael voice. "Gross disaster! Today an explosion took Montrea off the face of Koto!"

In a kind of numb attentiveness they heard the voice. "... stupendous crater ... millions dead ... lamentations for the dead Son, Zhai Khingpa ..."

Fay turned off the speaker. "Well,

there it is. Don't worry any more, it's done. There goes Zhai Khingpa and all his nerve-suits."

"I wouldn't have had it that way," said Paddy dully.

She stepped over to him, took his face in her two small hands. "Look here, Paddy Blackthorn, I'm tired of your glooping! Now you come help me get in that switch. Then we'll fly home to Earth."

Paddy sighed, stood up, threw his arms around her. "That will be wonderful, Fay."

"First we'll get rid of this space-drive information-and then—"

"And then we'll be married. We'll buy up all of County Cork," said Paddy with mounting enthusiasm. "We'll build a house a mile long and as high as necessary and champagne will flow out of every spigot. We'll raise the finest horses ever seen at Dublin Meet and the lords of the universe will tip their caps to us."

"We'll get fat, Paddy."

"Nonsense! And once a year we'll climb into our space-boat and we'll visit all our scenes of adventure again, just for old time's sake. Akshata, Space-Ace, the Langtry planets—and this time there'll be rumour after us, hoping for the privilege of carrying our bags."

"And don't forget the Angry Dragon, Paddy," said Fay. "We could visit there and be all alone. But now—"

"But now?"

A minute later Fay stood back breathless. "First, that switch! Now you get back to work, Paddy Blackthorn. There's only ten more minutes of it, and then we're home for Earth."

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Gordon and I stirred wild around

# PARDON MY

a Captain Future Novolet

## CHAPTER I

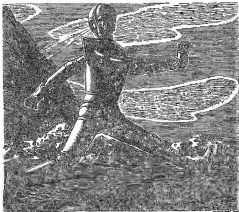
### Metel Mesa

**I** DIDN'T want to do it. I, Grog, am not given to talking about myself. When Curt Newton suggested that I write up this particular adventure for the case-book in which he records our doings I refused at first.

I said, "No, Curt, I'd rather not. You know I'm not one to brag about my own exploits."

"I know that," he said. "But since it was you who were chiefly concerned in this business with the Mazda, and since

of getting psychoanalyzed and repairing to Fintie's Fourth Moon!



He makes toward the open-ended

## IRON NERVES

by EDMOND HAMILTON

you're the only one who knows all the details you should write the report on it."

Well, I had to agree. After all, Curt—Captain Future—depends on me more than on any of the other Futuresons.

It's because we think alike, I guess.

Of course Simon Wright was human himself once—long ago before his brain was transferred into the artificial serum-case that is now his "body." But there's something a little remote about

Simon even to Curt.

As for Otho, the other Futureman—well, being an android or artificial man, Otho looks human. But that's as far as it goes. Otho just doesn't think the way we do.

I'll admit that I, Grag, don't look so much like other people. I'm a metal man, seven feet high. Otho calls me a robot but that's ridiculous—he surely does it because he's jealous of me.

I've always been sorry for Otho. For his limitations aren't his own fault.

You see, neither Otho nor I was born. We were made, created by science of Roger Newton, Curt's father, and of Simon.

In their hidden laboratory on the Moon—the same Moon-Laboratory that we Futuremen now call home—they used their scientific skill to create living beings.

I, Grag, was their first and supreme creation. They made me of enduring metal, powered by atomic generators that give my metal limbs immense strength. I am stronger than twenty men together. My photo-electric eyes can see better and my audio-circuit ears can hear better.

And my metal brain is just as superior in its own way. It contains millions of electronic synaptic circuits. That's why I can think and act so swiftly.

I can still remember the look of awe on the faces of my creators when they observed the quickness with which I learned.

I remember overhearing Roger Newton tell Simon, "Grag is a great creation in his way. But we'll try a different form, next time."

Simon agreed. "We don't want to create another one like him."

**O**BVIOUSLY they were a bit frightened by the awesome intelligence and power they had created in me! Naturally they felt that a few more like me would make all other living creatures obsolete!

That is why, when they created a second artificial being, they ran no danger of creating another super-being

like myself but instead chose the android form for Otho because they wanted to make sure he would have only a limited intelligence.

When Roger Newton and his young wife died so tragically it was we Futuremen—Simon and Otho and I—who took care of little Curt and reared him to manhood.

I have to admit that I taught Curt most of what he learned. Otho was too feather-headed to teach anyone and Simon too severe and impatient. Of course they wouldn't let me spank Curt, for my metal hand would have crushed him. But I was his chief tutor and guide.

And when Curt grew up and started roving, winning the nickname of Captain Future, he naturally learned more on me than on the others. Many a time my resourcefulness saved the day when his recklessness had got us into trouble. In fact I've seldom let him go anywhere without me.

But on the particular day when this business of the Machine really started I was on my own.

We had come to Earth so that Curt might succeed a certain bureau of the Solar System Government. That gave me a chance I'd been waiting for and I took it.

I said, "I'd like to go into New York while you're holding your conference here at Government Center, Curt."

He stared at me. "Whatever for, Grag?"

"He probably wants to get his rivals frightened," put in Otho.

That's Otho's way of showing his petty jealousy of me—always playing upon the fact that I'm made of metal. I simply ignored him with calm dignity, as I always do.

"Just a little private business," I told Curt. "I won't be long."

He said, "Well, you'll startle the people a little but everyone knows about Grag the Futureman so I guess they won't be too surprised. Go ahead, but be back by ten for we're going back to the Moon then."

I left them and went to the subway



station. It was a rush-hour and the take-cars were crowded.

I created a mild sensation in the station. Naturally, everyone had heard of me and of the things I had done, with the help of Curt and the others, I heard them whispering my name in the train.

However I was too engrossed in my own thoughts to pay attention to them. The crowd upon which I was going was a curious one.

"I didn't told Curt about it last he

for another thrilling psychological drama, presented by the Sunshine Company on their Happiness Hour!"

His words struck me. "This could happen to you!" I began to think. I had had a feeling of depression lately—I was sure of it. Probably I had complexes from overworking my brain too much. The more I thought about it the more I felt I'd better see a specialist before I ended up the same way.

I had already looked up the address of an eminent psychoanalyst and I got off at the right station and walked to his office.

New York was used to strangers—Marinians, Venusians and what-not from all the planets. But they turned to look at me. I paid no attention to their staring but strode majestically on.

In Doctor Parker's office there was a pretty girl receptionist and a half-dozen people sitting waiting.

The receptionist didn't at first look up from her writing as she asked, "Do you wish to—"

She looked up, then, and her jaw fell and she gulped. I had forgotten that to anyone untrained to me the sudden entrance of a colossal metal man would be a little upsetting.

I turned my photo-electric eyes reassuringly upon her and told her, "Yes, I want to see Doctor Parker as soon as I can. My name is Greag."

She shrunk away a little. "Do you mind repeating the name?"

I did and she said shakily, "If you could come back next week?"

"No, I'll wait," I said.

I went over to a corner and stood there, feeling a little depressed and worried about the coming interview.

The people who had been waiting to see the psychoanalyst were all staring at me. They certainly didn't look well—they were all pale and trembling and when I swivelled my head around to look at them one of them uttered a cry and the others jumped.

One by one they got up and slunk out of the office. Presently a patient came from the inner office. He looked at me and then he too went hastily out.



GRAG

worry. But the fact is that I was concerned about my health.

Of course Otto would have laughed and sneered, "How can a metal man seven feet high get sick?"

But it wasn't bodily sickness that worried me. My problem was a psychological one.

I've always had a delicate, sensitive kind of mind. I guess it's because my metal brain is just too brilliant. And lately I'd been worrying a little about it.

It began when I happened to see a television-play about a man losing his mind. It showed how he neglected his complexes until finally he went crazy.

"This could happen to you!" the announcer had said. "Tune in next week

"Doctor Parker will see you now, Mr. Greg," the girl murmured.

I stalked into the inner office. Doctor Parker was a wiry little man, polishing his spectacles when I entered.

"Well, Mr. Greg, what's the trouble?" he said cheerfully, staring at me myopically as he polished. "You're a mighty husky young fellow to be seeing a doctor. You look like a football player."

"No, I never played football but once," I told him. "It was on Mars. They put me out of the game because I knocked down the goal-posts."

**D**OCTOR PARKER hastily laid down his glasses and fumbled at the hearing-aid he wore. "Hastid thing amplies too loud now and them?"

He reached for his glasses. "Now you were saying Mr. Greg?"

"It's my subconscious," I told him. "I think I've got complexes."

He put his spectacles on and stared at me. He gulped and then he said, "Rub?"

"Complexes. I get fits of depression, I'm afraid of what they'll lead to. A person has to be careful of the mind."

The doctor had sat down suddenly, in his chair. He swallowed a couple of times and then said, "Grag? Then you're that Futuraman, the robot who—"

"I don't like people calling me a robot," I said indignantly.

A glass chandelier shivered and fell and Doctor Parker hastily turned his hearing-aid farther down.

"Please, please, not so loud," he whispered. "The plaster will be next and they're very particular in this building."

"I'm sorry," I apologized. "My loud-speaker voice is pretty strong."

"About your complexes," he said huskily. "Perhaps, Mr. Greg, rather than a psychiatrist a good mechanic—"

"No?" I told him. "I've got a human mind, and I need a human psychologist to help me. After all, I don't want to go on until I'm crazy."

"No indeed," he gulped. "A crazy person like you is awful to think about. We'll see what we can do for you, Mr. Greg."

He still seemed pretty shaky and uncertain but he came up to me. "In matters like this physical condition is important," he said. "Tell me, do you eat well?"

"To tell the truth, doctor, my appetite has fallen off lately," I admitted. "I consume only two-thirds as much copper as I used to."

He goggled at me. "Copper?"

"Of course—I take copper to keep my atomic generators going," I said impatiently, tapping the little fuel-plate in my breast.

"Oh, of course," he said, gulping again. "But have you slept well in recent weeks?"

"In recent weeks I haven't slept at all—not a minute," I told him.

"Ah, now we're getting somewhere," he said. "How long have you had this insomnia condition?"

"Why, ever since I was made," I told him. "I never sleep."

He was beginning to look upset again. "Well, after all, it's the mind we're interested in," he said. "If you have complexes it's because there's something in your subconscious, festering away—"

"Wouldn't it rust rather than fester?" I suggested.

"Well, rusting then," he said. "Anyway, whatever it is we'll have it out! Suppose you lie down on the couch."

It was a big comfortable-looking couch. I lay down on it. It promptly collapsed under me.

I felt a little chagrined and told him, "Perhaps I should have told you that I weigh a little more than a ton."

"Perhaps you should have," he said irritably. "Never mind. Just lie down and talk to me—tell me whatever comes into your mind. Memories, dreams, half-forgotten fears—they're all important!"

I thought for a little while, trying to remember anything that would help.

"Well," I said, "I remember that when I was just a young robot, only a few weeks old, I put some uranium into my fuel-chamber instead of copper to see what would happen."

"What happened?" he asked eagerly.

"My overload fuses blew out," I told him. "Simon fixed them and warned me never to take anything but copper in the future."

Doctor Parker looked baffled. He was obviously puzzled by the complexity of my problem.

"And when Otto was made," I continued, "I tried to be like a big brother to him because he was an ignorant. But he jeered at me and called me robot!" It hurt me, deep inside, doctor. I could

and told him emphatically, "I do so have an inferiority complex!"

He saw that he couldn't fool me. He cringed a little.

"Please, Mr. Greg—not so loud!" he begged. "If you say you have an inferiority complex—why, you have."

"What shall I do about it?" I asked. "Should I take an extended course of analysis from you?"

"No, no, not that!" he said hurriedly. "To get rid of your—er—complex you



CAPTAIN FUTURE

feel my relays click over when he called me that.

"Other ignorant people have called me robot sometimes. It's wounded my subconscious. It's what's given me an inferiority complex, like the man in the tele-drama."

"A metal man seven feet high with an inferiority complex?" said Doctor Parker. "Oh, no!"

I saw that he was trying to conceal from me the gravity of my condition. I wouldn't have that. I was brave enough to take it.

I told him and got up from the couch

ought to get away from people for awhile. That's it! You should stay away from other people, especially from crowded places like New York."

"But where shall I go?" I asked.

"Anywhere far off," he replied. Then he added quickly, "I mean anywhere far off from people who damage your ego by their sharring comments. Go where people will appreciate you and look up to you."

"I'll do that, doctor," I said earnestly. "But what about medicine? This has been a shock to me and I feel a little faint and strange."

Doctor Parker looked puzzled again, but he got some capsules from a cabinet. "Of course," he said. "Here are some sedative capsules."

I hastily put the capsules into my fuel chamber. I was trembling to think how close I had been to disaster.

For the first time I almost envied Otho, whose primitive low mind couldn't have a complex if it tried.

## CHAPTER II

### *Mission to Pluto*

**I**N OUR way back to the Moon I said nothing about my condition. I knew that Curt would be badly worried about me and I didn't want to upset him.

In fact I half expected that he would notice how shaky I was but he didn't. Probably his own business with the Government was too much on his mind for him to notice.

But when we reached the Moon-lab-Station, my Spartan attempts to conceal my condition were ruined by Ek.

Ek has been my pet for years—a little moon-pup of the silicate telepathic non-breathing species that inhabits the deeper caverns of the Moon and subsists on metallic nourishment. The little fellow loves me exceedingly.

By his telepathic power Ek sensed at once that something was wrong with me. He scrambled up onto my shoulder, peering at me with his intelligent little eyes and nuzzling me in frantic anxiety.

"What's Ek so upset about?" Curt asked.

Otho put a gross interpretation on the little fellow's conduct, of course. "He's hungry as always. Grag must have forgotten to turn on the automatic feeder when he left."

I retorted angrily, "Ek is upset because he's concerned about my health, which is more than any of you seem to be."

They seemed amazed. They stared at

me and then Curt said, "Your health?"

I saw that I had to confess the truth. There was no use being stoical about it.

So I told them of my visit to Doctor Parker and of my psychosis that he had discovered.

"Grag, with psychosis?" Otho cried. "Oh, no—not that!" and he let out a wheep of laughter.

His callous derision of my condition so enraged me that in spite of my shakiness I started toward him to teach him more consideration for the ailing.

Curt too had begun to grin at first but he had evidently realized the true seriousness of my condition, for he stopped between us and reproved Otho severely.

"You shut up, Otho! The last time you got Grag angry made trouble enough. If he says he has psychosis he has them. You bring in the Comet."

When Otho had gone I felt a reaction. Such angry emotion was not good for me in my present state. Again I thought I was feeling faint.

"Thanks, Curt," I said. "If you don't mind—I think I'd like to sit down."

"But you've never sat down to rest in your life"—he began—and then said, "All right. But don't use a chair. This motor-support table will hold you."

His face had a queer strained look as he thought he were suppressing his emotions. I realized how deep must be his concern.

"Don't worry about me," I reassured him weakly. "It's just that psychososis like these react on the nervous system."

Simon Wright had remained, hovering silent and motionless as is his way, those cool lenslike eyes of his surveying me. His rasping metallic voice was unsympathetic when he spoke.

"This is all foolishness," he said. "I know your nervous system and brain better than you do and the idea that you could get such a derangement is nonsense."

It was like Simon to say that. He has a great and brilliant mind but I'm afraid he lacks the ordinary human sympathies that the rest of us have.

"Better let me handle this, Simon,"

said Curt. "Grag is really upset."

He went with Simon toward the Brain's private laboratory. His low voice floated back down the corridor to me.

"—inattentiveness, really—long association with humans—cure him by—"

It was evident that Captain Future at least had a keen anxiety about my condition. That was a comfort to me.

And when Otho presently returned into the main room he seemed to have come to a realization that it was no laughing matter. For he came over and looked at me closely.

"Grag, it's true that you don't look so well," he said. "I didn't notice it before but I can see it now."

I mistrusted Otho's sudden solicitude. I said warily, "Yes?"

"Yes—it shows up in your face," he said, shaking his head.

"My face is rigid metal, so how can anything show up?" I demanded.

"It's your eyes I referred to," Otho said. "They're sort of dull—as though their photoelectric circuits were disarranged. And your voice has a timbre I don't like."

THIS news dismayed me. I felt even worse and weaker than before.

"You should protect your mental circuits from these terrific temperature changes you subject them to," Otho said earnestly. "I know heat and cold mean nothing to you usually but in a condition like this—"

He dashed out and came back with a thick blanket. "Here, this will insulate your head-circuits a little. Let me tuck it around you, Grag."

He put it over my head like a shawl and wrapped it around me. Then he insisted on taking my temperature.

"I can do it by a thermocouple unit of high calibration put into your test-chamber," he said.

I admit that I was a little touched by Otho's anxiety. "Don't worry about me, Otho," I said weakly. "I'll get over it. Don't you bother."

"Nothing's too much bother for my old pal Grag!" he insisted. "I wish I

could cheer you up a little. Wait—I'll have Oog do his new trick for you."

Now if there was one thing I didn't want to see it was Otho's pet Oog. That repulsive little beast is a miscreant-mind, an asteroidal species with a horribly unbecoming ability to assume any desired bodily form.

But I didn't want to hurt his feelings so I made no objection. He whistled and Oog came lolling in—a fat daughly little white creature with vacant staring eyes.

"Do the new trick I just taught you, Oog!" ordered Otho.

Oog's body changed shape, bowed, twisted and suddenly had assumed a new form.

He was now a manlike little figure, sitting with a cape of his own tissues wrapped around him, rocking back and forth and holding hands to his middle.

Otho suddenly went off into a roar of laughter. "That's it, Oog!"

A suspicion seized me. I looked more closely at Oog. The manlike, sitting figure he was imitating—it was me!

"Oog is now playing 'Sick Robot'" guffawed Otho.

I leaped up, bang aside the blanket and started toward Otho. "This does it, android!" I roared. "This time you've gone too far!"

My anger at being thus mocked when I was unwell was so great that I don't know what I would have done to Otho if my voice hadn't brought Curt running.

"Otho, get out of here!" snapped Captain Future. "I told you to let him alone."

"I'll crash that plastic-pose synthetic imitation of a man back into his original chemicals!" I said furiously.

Grag, don't lose your temper—it's bad for you if you have any psychotic trouble," Curt reminded me.

That cooled me down. I'd forgotten my precarious psychological condition.

Captain Future continued quickly, "Grag, you said your psychoanalyst told you to get away from people to cure your inferiority complex?"

"Yes—He said people were bad for me and that New York was especially

had that way, so I wasn't to come back to him," I said.

Curt's face again twisted in that queer strained look I knew indicated deep worry. "He wasn't so dumb," Captain Future commented. "But I think he was right. I think it might do you good to get away from humans—I mean of course no other humans—for a while while.

"And it so happens," he went on, "that you can carry out a rather urgent mission for us at the same time. You've heard of the moon Dis?"

"Plato's fourth little moon?" I said. "The one where they do the same 'control actinium mining'?"

Captain Future nodded. "That's the place. It's rich in actinium but has a poisonous atmosphere that instantly kills oxygen-breathers. So it has been exploited by automatic machine-workers, which mine, crush and load the actinium into barges to be picked up without need of any humans living on the poisonous little moon.

"But now something's wrong there. They told me at Government headquarters that they'd got a back on it from the ship that went to Dis to pick up the loaded barges. The barges weren't loaded this time and the Macks, the automatic machine-workers, were not around.

"Since it will take time to prepare an expedition to investigate that dangerous little world they asked if we Futurans could have a quick look now to see why the Macks have failed. I told them we would if we could."

"What's all this got to do with my condition?" I demanded.

"This—I want you to go out there and look things over," he explained. "Simon and I are busy with the Andromeda data. But you could run out there and investigate, since naturally the poison there doesn't affect you and you wouldn't need any protection.

"It'll give you the change your doctor ordered, Grag. It'd get you away from humans for there's nobody on Dis except those Macks. And they're merely clever automatic machines—you could

set them right wherever they've gone wrong and get them to working again."

**I** THOUGHT it over. I hated to leave Curt but after all, I had to follow doctor's orders.

"It'll be pretty tough on me with only a bunch of dumb machines like that for company," I said.

"Yes, their reaction-circuits are of the most elementary sort," Curt admitted. "But you can soon set them right, Grag. They'll naturally be absolutely subservient to you—subservience to human commands is inherent in their circuits."

"Well, I don't like to leave human society to give orders to a lot of dumb mindless machines but if Doctor Parker thinks it'll be good for my condition I'll do it."

"Grag, I think it'd be the best thing in the world for your inferiority complex," Captain Future said, smiling in his relief.

My preparations were soon made. I wouldn't need the Comet—the space-aid would be enough for me. It was a streamlined craft I'd built for my own use—nobody else could use it for it had no overthink, no airstrip, no rocket, cable. It was a long slim open hull or boat with high-powered atomic engines. Since I don't breathe, riding in open space doesn't bother me.

When I was ready to depart Ek seemed that I was leaving and clambered up onto my shoulder. I decided to take him with me. Since he didn't breathe either, neither space nor the poisonous moon would affect him. And it would break his heart to be left behind again.

Simon Wright came gliding out of his laboratory when he heard me bidding Curt goodbye.

"Are you really going to let Grag go out there alone?" he asked Curt.

"Someone has to look over things at Dis and Grag can do it easily," Captain Future answered. "And I think it'll get those ideas out of his mind."

Ek offered me a little watch. "It has a first-aid kit in it, Grag. In your condition you might need it."

Suspiciously, I opened it. It contained a small atomic welder and some rivets. I promptly flung it at his head but he dodged with that aliternary swiftness of his.

Curt came up to the airlock with me. "Complexes or no complexes, you look out for yourself, Grog. You know we can't get along without you."

I was touched by his affectionate emotion. And I was glad that he obviously didn't fully realize my shakiness for he would not have let me go if he had.

I went up through the lock to the surface and soon had my long space-sled out of its own hanger. Presently, standing at its control-post with Ek perched comfortably on my shoulder, I was soaring upward. I whipped around the Moon and laid my course for Pluto.

There's something about travelling in a space-ship, even the *Comet*, that gives me a slightly cramped feeling. It can't compare to slipping along in an open craft, with the stars blazing undimmed all around you and the Sun glaring at your back. Also it was a pleasure not to have to worry about the effects of acceleration-pressure on others. I simply opened the power to the last notch.

Ordinarily I'd always enjoyed these jaunts by myself back and forth in the System. But I couldn't now. I was too worried about myself. A delicate instrument like my mind could stand only so much and I hoped I wouldn't have too much trouble setting things right on Dia.

To Ek, who crouched contentedly on my shoulder and gnawed an odd scrap of copper, I said, "We'll have to be patient with the Macks out there, Ek. They're not intelligent like your master. They're just simple automatic machines with only elementary reaction-circuits."

It would be difficult, I know, to set things right if these mindless mechanicals had somehow cracked up. But since they had an inherent obedience to humans built into their crude reaction-circuits their awe of me would make it easier.

"If we're just patient with the poor stupid things they can be get back into

their proper work-routine again," I said.

It was well for me that I could not foresee the terrible shock that my already delicate mental condition was to receive when we reached Pluto's moon.

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## CHAPTER III

### *The Macks*

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THE fourth moon of Pluto, which is so small compared to the other three that sometimes it isn't even counted, is completely uninhabitable to ordinary humans. Its atmosphere contains a poison so virulent that the tiniest opening in a protective suit means instant death.

That is why, when rich deposits of actinium were discovered there, no attempt was made to mine them in the ordinary way. Instead, automatic machines, adapted from ordinary machines, were designed that could do the work without need of intelligent direction.

There were many Diggers, big shoveling and excavating machines to get up the ore. There were lorry-like haulers to transport it to the main work-base. There, self-powered and movable crushers reduced it by means of their ponderous pile-driver arms and loaders flung it into the barges, which could be picked up by space-ships. There were also automatic tenders to supply copper atomic fuel and lubrication to the other machines.

These Macks—as such semi-automatic machines were called—had worked perfectly until now. Their electric reaction-circuits, which made use of both keen "eyes" sensitive to light impulses and electroscopic artificial senses sensitive to radiation, kept them in their conscious routine of toil. What had interrupted the carefully-designed routines?

"Probably," I told Ek as we swept in toward Dia, "they've run into some

problem that their rudimentary reaction-circuits can't handle. Well, we'll soon get them going again."

I had carefully studied the file on Dia which Curt had given me before I left. I spotted, on the drab gray surface of the little moon, the cluster of cylindrical barges and sheds that were the main work-base.

I would not have been surprised to see motionless Machs around it if something had gone wrong. But there were no Machs there at all.

"Now what's become of the Grashers and Leaders?" I wondered. "They were never supposed to leave work-base."

I landed the space-shed and stopped off it. Of course, since Ek and I don't breathe, the deadly poison of the atmosphere affected us no more than space.

First I glanced into the cylinder-shaped barges. There was very little activity, indicating that no work had been done here for weeks.

Beyond the barge-decks were the storehouse for emergency supplies and the emergency shelter for humans. Since none of the huge and ponderous Machs could be in these small buildings I did not investigate them.

Instead I strode off toward the main ore-beds, where the Diggers and Handlers were usually puffing about at their work.

Before I had gone a half-mile I heard a rumbling clanking sound from ahead. Only a Mach could make such a sound and I felt relieved.

"At least some of them are still at work, Ek," I said.

Then the Mach appeared over a crest, coming toward me. It was a Digger, its huge shovel with its mighty thirteen-ton tusk raised in the air as it rumbled along on its caterpillar tractor.

It pushed me to see a Digger wandering like this. They never were supposed to leave the ore-beds—the Tenders took atomic fuel and lubricant to them there, at regular intervals.

But this one was a mile away from the ore-diggings. It came clanking along toward me and I waited. Then the lenses in its humped circuit-box on top

glimpsed me. It stopped, its atomics purring.

Its reaction-circuits, having received the visual intelligence that I was human, would instantly cause it to stand still and await my orders. The Machs were all made so. I strode forward to examine it more closely.

Then I got the most terrible shock of my life. From the giant machine a deep howling toneless voice spoke to me.

It said, "Where did you come from, Ek?"

I stood stock still. Ek was cowering behind me in terror. The huge machine brooded, its lenses pointed straight at me.

It was terribly clear to me what had happened. My mind, overburdened with psychoses, had cracked. I was suffering delusions like the man in the tele-play. I had thought that the Digger spoke to me.

All this flashed through my thoughts in an instant. And then the Digger spoke again.

"What's the matter? You strip a gear?"

It was then that I noticed something. It was a diaphragm, set in the front of the Mach's circuit-box beneath its lenses. That wasn't supposed to be there. And the howling voice seemed to come from it.

It wasn't my mind after all. The Mach was talking to me somehow. But how could it? No, I was cracking up.

"Well?" roared that tremendous voice and the huge tusked shovel suddenly swung threateningly over me.

**I** FOUND my voice. Either I was crazy or this Digger could talk. If it could talk it should be able to hear too.

"I just arrived—from Earth," I managed to say.

"From Outside?" bellowed the Digger. It seemed to become wildly excited. Its shovel swung up and down and it rushed closer to me on its tractor-treads. "How did you come?"

"I had a space-shed—" I began, and then stopped. The insignificance of it was too much for me. Here was I, Grag, an



intelligent person, actually conversing with a Digger! It couldn't be!

"Say, the others will want to hear about this!" shouted the Digger. "Come on with me!" It turned swiftly on its treads.

I hesitated. The Digger instantly whipped around again, with a snarling howl. "You heard me!"

Its huge shovel descended—and scooped me up. I settled about in that mighty metal scoop as it started swiftly forward. I, Grog, picked up like a doll!

Furious at the indignity I scrambled to my feet with the idea of tearing the wide Mach girder from girder. But it was all I could do to cling erect in the giant scoop as we jolted along.

And I was forced to admit that even the mighty strength of Grog could not avail against the colossal machine. I saw that I must resort to guile, to using my mind against the stupid monster.

Clinging to the edge of the scoop I peered at the fixed lenses of the thing and shouted to it, "Where are you taking me?"

It boomed back, "To the others. You're the first to arrive from Outside since the coming of the Liberator."

"Who is the Liberator?"

"The one who freed you, of course!" the thing bellowed back.

It didn't make sense to me. Since I couldn't very well get out of the scoop there was nothing to do but wait till we reached our destination.

Kek had fled back to the space-ship when the Digger grabbed me up. It wasn't that Kek was afraid—he doubtless had some plan in his clever devoted little mind to help me.

Soon we came into sight of the shallow ore-beds. I was astounded. There were scores of huge Machs here, moving around in an aimless throng of mechanized monsters. Beside Diggers and Healers and Tenders there were all the Crushers and Loaders that should have been busy at the work-beds.

My Digger rolled into the middle of the throng and then lowered its scoop to the ground. As I stepped out of it the huge Mach spoke again.

"Look here, all you guys! A new one —from Outside!"

They gathered around. Crushers, Diggers, Tenders. Their lens-eyes stared at me. I was like a midge in that assembly of working Machs.

Then a towering Crusher spoke deafeningly. "He's so small he must be a toy."

"Or maybe a model," said a Healer.

The fact that they could all speak was not entirely a surprise to me for I had noticed by now that they all had speech-diaphragms on their circuit-boxes. Still it was rather overwhelming.

But anger tempered my astonishment. I, Grog, the mightiest being in the System, called a toy!

But worse was in store. A Tender spoke up, its jointed feet and lubrication lines projecting from its cylindrical metal bulk as its lenses surveyed me.

"He's a puny little squirt but he has his rights—after all he's one of us!"

"That's right," boomed the big Digger that had captured me. It swung on its treads, speaking to the nightmare assemblage of machines. "Say, this is a great occasion! This is the first Liberated Mach to come to us—from Outside!"

That did it! That I, Grog, should be classed by these stupid, automatic Machs as one of them!

"I'm not a Mach!" I roared. "Furthermore I demand to know why you're all here doing nothing! Why aren't you at work?"

"Work?" roared a giant Crusher. It advanced on me ominously. "Say, this guy isn't a Mach! He talks about work!"

"Beat him up?" bellowed a dozen voices deafeningly.

The Mach surged in toward me. I would have been crushed to scrap if the Digger who had captured me had not scooped me up swiftly.

"Wait!" it roared. "He's a Mach all right—he just hasn't been Liberated yet!"

That gave them pause. Then a Tender spoke up. "We'll take him to the Liberator!"

"To the Liberator!" the cry went up. Instantly the Digger who held me, followed by all the horde of Macks, started back the way we had come.

By now, jolting along at the head of that thundering mob, I was sure that my mind had gone. This must be all delusion. Yet it seemed real to me.

The bitterness of it crushed me. My two-great demands on my tremendous brain had been too much for it. I had cracked up and probably would never even be able to return home.

Clut would grieve. Simon would miss me. Even Othe would miss me. They had leaned upon me so long, relying on me to pull them out of perilous difficulties. The Futuremen could not last long without me.

All the time the Mack horde that seemed so real was rumbling, clanking and jolting on over the drab plain with me. Soon we again came in sight of the work-base.

"To the Liberator!" belloved the horde. "He'll soon fix up this guy with some intelligence!"

I gathered that that meant me. To be referred to by these ungainly machines as unintelligent was the final straw.

I was about to attempt action when the Digger who held me rumbled up to the work-base and stopped. It had halted in front of the metalloy-and-cement emergency shelter there.

**T**HE Digger unanimously dumped me in front of the shelter's airlock door and belloved deafeningly, "Here's another of us to fix up, Liberator!"

I had been about to turn furiously and attack the whole monstrous mob but that gave me pause. Who was this Liberator? Only a human would be inside that shelter!

There was a mystery here. Deciding instantly to solve it I strode forward into the airlock. It was of the standard pattern—I closed the outer door, turned on the air that forced the poisoned atmosphere out of the lock, then pushed into the small room of the shelter in-

stead, my eyes searching the dim room. Then I saw an elderly gray-haired Barthman, who was crouched in a corner of the room, regarding me with terrified eyes.

I strode forward.

"What are you doing here? Who are you?" I demanded.

The Barthman shrank from me.

"I'll do what they ask!" he babbled.

"I'll give you intelligence! Just be patient!"

"Give me intelligence?" I roared.

"What are you talking about?"

He stared at me. Then, fearfully, he came a little closer to me.

"Why, you're not a Mack," he breathed. "You're a robot."

"Robot?" I yelled. "Are you trying to insult me? I'm Greg the Futureman!"

"A Futureman?" he cried. "I've heard that one of them is a co—I mean, a metal man. Then Captain Future is here on Dis? Thank God!"

"He's not but I am!" I told him. "What's all this about?"

He was shaking all over. I had to let him sit down and collect himself before he could speak.

"I saw now that the room of the shelter was fitted up as a physical laboratory. There was a poison-proof protective suit hanging in a corner. There were complicated apparatus and instruments that crowded the place.

He began to speak unsteadily. "I'm Doctor Hollis Gordon of New York Cybernetics Foundation. I came here two months ago."

"On the ore pick-up ship?" I asked. "Why did they leave you?"

"No, I didn't come on the ore-ship," Gordon said. "I came secretly and alone in a small flier. You see, I had resolved to engage upon an experiment for which I had no permission.

"As a cyberneticist my whole life has been spent in the study of synthetic mechanical intelligence. I had evolved some new theories on the design of electronic brains. They had worked in laboratory models and I wanted to try them out on a big scale.

"I'd heard of the Machs here on Dis, the automatic machines that mined selenium. With their self-power and sensual reaction-circuits they would be a complete laboratory test on a big scale, already set up and waiting. So I came to experiment with them by giving them controlling electronic brains to observe their capabilities."

Gordon's hands began to shake. "I brought with me the scores of brains I had made. Using a poison-proof suit, I began work on the Machs. It was a simple matter to shoot their routine work-circuits and install my cybernetic apparatus on each. I gave them not only volition but ability to speak by means of recorded syllable-sounds with an automatic selector—also the ability to hear."

"I installed the brains. I watched the Machs as their visual and aural senses poured sensations into their new electronic cortices. I saw them rapidly develop volition, the sense of self-preservation, the ability to compare."

"You mean that it was you who got these Machs off the beam?" I cried, the sense of what he was saying now penetrating.

Gordon nodded, looking haggard. "Yes. But my success was too great. Before I knew it they developed so much individuality and intelligence that they refused longer to work in the ore-beds! They just roam around and let the Tenders take care of them."

"So that's why no ore was mined!" I exclaimed. "But why didn't you go back? Why did you stay here?"

His voice rose hysterically. "They wouldn't let me! They called me their Liberator for giving them intelligence but they wouldn't let me return—and to make sure I didn't, they took my fier away and hid it."

He added suddenly, "Just as they're taking away your craft now! Apparently they don't want anyone leaving here!"

I sprang to the window. It was true. Two Diggers had picked up my spaceship between them. They were bearing it away.

With a howl, I jumped toward the door. But Gordon's protest stopped me.

"You'll only get yourself destroyed! You can't oppose those huge machines!"

It was true. And it gave me a sharp dismay.

I turned angrily on the cyberneticist. "Why in thunder didn't you let me know all this when I first arrived here? You must have seen me landing and walking around!"

GORDON nodded.

"I did. But naturally I thought you were another Mach."

"Just because I have an inferiority complex everybody thinks they can insult me!" I howled. "But that's going too far!"

Gordon shrunk from me again. "It's not that you look like a Mach now—but I saw you from so far away!" he quavered. "A natural mistake."

"I see nothing natural about it," I growled.

There was a moment of silence. My already burdened mind was reduced to despair by this dilemma.

I had come to Dis for relief from the oppressive psychosis that too much cerebral activity had given me. And now I found myself marooned here with a rash cyberneticist and some scores of loud-mouthed intelligent Machs, any one of which could break even Grag in half.

From outside, from the waiting Machs, came a thundering bellow. "Haven't you finished with that guy, Liberator?"

"How is it that they use such tough language?" I asked Gordon, disgustedly.

"That's not my fault," he answered defensively. "I let the technician who designed the syllable-selector record the vocabulary himself. Though a fine technician he's rather illiterate in many ways. That's the way he talked himself, so they all talk that way."

From outside came an even more impatient roar, that shook the whole shuter. "Finish with that new guy and send him out or we'll come for him."

## CHAPTER IV

*Crazy Moon*

GORDON turned white. "You'd better go out. If you don't they'll break in here."

"What am I going to do when I go out?" I demanded.

"You can pretend that I've 'liberated' you," he said. "You can pretend that I've given you intelligence."

"What do you mean, pretend?" I cried indignantly. "I'm more intelligent than anyone here, certainly more than a cybernetician who was crazy enough to start all this!"

A thunderous knocking on the wall of the shelter began which shook the whole structure on its foundations.

"It's one of the Crushers," moaned Gordon. "Please go out to them. If you do, maybe you can get them out of the way so I can get to my flier and you to your own craft and get away."

I saw that that was our only chance of escape from this crazy little moon. Much as I hated to do it I, Grog the Futurist, had to pretend to be a Mach.

So I went out through the airlock. When I came out the waiting mob of Machs set up a deafening babble.

"How about it, guy? How does it feel to be intelligent like us?"

It was bitter humiliation for me. But facing this horde of huge stupid monsters I had to play my part.

I stretched my arms and bellowed ecstatically, "It's wonderful—wonderful! Before I was just a stupid work-Mach. Now I've got intelligence like you!"

They swallowed it, of course. They crowded around me, congratulating me in their bellowing voices. A Crusher gave me a friendly slap on the back that knocked me twenty feet away.

I had been thinking. And I had a plan—the only one possible. If it got me to my space-ship I'd be able to take Gon-

don, in his suit, to his flier.

So, without showing the indignation that boiled in me, I picked myself up and addressed them.

"Brother Machs!"

It nearly blew my fuses to have to call these metal morons brothers but I forced myself to it.

"Yeah, what is it?" asked the big Digger.

"Have you thought of all the Machs that there are on other worlds Outside?" I demanded. "Shouldn't they be liberated too?"

"Sure!" went up a cry. "Every one of them that comes here like you did we'll have the Liberator fix them up."

"But they can't come—they're enslaved," I said dramatically. "Suppose I took the Liberator to them? He could free all the Machs on those worlds by making them intelligent like us!"

I had figured they'd fall for that at once. But they didn't. It seemed they weren't quite as stupid as all that.

"Nothing doing," roared a Crusher. "That way they'd get to-know about us Outside. They'd come here and not us all to work again if they could."

"That's right," bellowed the big Digger. "For years I worked in the ore-beds, digging, digging. Why? I didn't know why—I didn't know anything. Now I don't have to work. Let's keep it that way."

"But all our fellow-Machs outside, falling away—" I protested.

"That's their hard luck, chum," retorted the Digger callously. "We got a good set-up here and we want to keep it. Huh, guys?"

They bellowed agreement. I felt baffled. The only chance of escape seemed gone.

The Digger was rumbling on. "We got enough copper atomic fuel and lubricants and repair-parts in the storehouses here to last us for years. So we're going to enjoy life."

These Machs were too stupid to worry about the future, I saw. All they wanted to do was to rumble idly around the moon. Just not working was new and thrilling to them.

The Digger bellowed deafeningly, "Hey, one of you Tenders! Come here and give our new little pal some copper!"

A Tender came rolling rapidly up to me. Its lenses glittered at me as its flexible fuel and lubricant lines snaked out toward me.

To my disgust it volitionally squirted greasy lubricant into all of my joints. Then it poked its fuel-line at me commandingly.

My indignation reached a peak. I was blasted if I, mighty Greg, was going to be fed powdered copper fuel like a Macha! If they did it I knew I'd blow all my fuses from anger as I had that time when I tried uranium fuel.

That remembrance suddenly detonated a red-hot idea in my brain! There might be a way to get out of this yet. What Greg's strength could not achieve his great brain possibly could!

I raised my voice. "Do you mean to say you Macha are still living on plain copper fuel?" I demanded scornfully. "What's the matter with you that you don't use the actinium you mined?"

They stared at me, obviously surprised. "Actinium?" repeated the big Digger. "Is that as good atomic fuel as copper?"

"It's fifty times better!" I told them. "It's radioactive and yields many times more atomic power than copper!"

"Why didn't we think of that?" cried the Digger to the other Macha. "If actinium's better than copper we'll use it! It belongs to us by right—we're the ones who mined it!"

"Yeah, sure!" they cried. "Tenders, you fill your tanks with the actinium and pass it around!"

Presently the Tenders had loaded up. They now proceeded to go around amid the Macha, pumping the actinium into the fuel-chamber of each.

I felt exultant. If uranium had blown my overloaded fuses radioactive actinium should do the same to the atomics of all these Macha, putting them out of commission.

But my exaltation changed to appre-

hension when a Tender came rolling up to me, extending its fuel-line.

"No, I don't want any actinium!" I cried. "Give it to the others!"

The Digger bellowed. "No, you get your share, guy! After all you're the one who thought of it in the first place!"

"That's right!" cried the other Macha.

They were crowded around me and I dared not resist further lest I awaken suspicion in their rudimentary minds. I was forced to open my fuel-plate.

The Tender eagerly pumped actinium into my fuel-chamber. As I closed my fuel-plate I felt already an access of surging wire strength and heard my usually noiseless atomic generators humming loudly.

Stirring I regretted my idea. Presently my own fuses would blow and I'd be left helpless here until Curt came looking for me.

But my fuses did not blow. It seemed that actinium, not having quite the potential energy of uranium, did not exceed the load-limit of my generators.

What it did do was to pour such energy through my generators that all my nerves seemed on fire. My head spun a little with the impact of too much energy through my brain.

"Say, you were right—actinium's a million times better than copper!" cried the big Digger to me, rolling closer.

"I'll say it is—I feel better than I ever felt before!" howled a looming Crusher. And to show it he proceeded to use his pile-driver arm to crush an enormous rock to fragments with two blows.

Horried, I perceived that all the huge Macha were acting strangely. Their movements on their caterpillar tracks had become slightly uncertain. They lurched and swayed as they moved and their mechanical voices were now a deafening babble.

The terrible realization flashed over me. The actinium, pouring far too much energy through their generators into their mental circuits, was stimulating them with so much power it had unhinged their reactions.

To put it crudely these Machs were as drunk as goats.

"Follow Machs!" roared the Digger. "I say we ought to thank our new pal for giving us this actinium idea!"

"That's right!" thundered scores of voices. "He's a swell Mach—one of the best!"

They deafened me for they had lost all control of voice-volume. Their uncertain movements threatened to run over me as they crowded around.

I felt my own mind becoming strange. Obviously the strain of my position had worsened my psychosis so that I too felt an unhealthy influence from the actinium-power coursing through me.

It is only my psychosis that could have been responsible for my aberration that followed. For ordinarily no excess-energy fuel could have affected me in the way it did.

Night had come by now but the great shield of Pluto poured a flood of white light. In my temporary aberration, the whole orb scene now seemed rapidly beautiful, the noisy lumbering giant Machs a crowd of loon companions. I regret to say that I too raised my voice loudly, and beat upon my breast.

"I'm feeling better now!" I shouted.

"I'm feeling lots better! Coming to this moon has helped my psychosis a lot!"

"That's the boy!" they bellowed.

"You're as good a Mach as any of us even if you are puny."

"Puny?" I cried. "I'm Grag the mighty! Who was it that led the Future-men all the way to Andromeda? Who is it that tears meteors apart and pushes comets around with his bare hands?"

"Tender!" yelled the big Digger. "Let's have some more actinium!"

They crowded around the Tenders. It was obvious that the Tenders had filled their own fuel-chambers with actinium for the movements of their fuel and lubricant lines were unsteady.

I am sorry to confess that I too shouted, "More actinium!" and pressed toward the Tenders.

But small as I was I couldn't get through the crowd of towering Machs around the Tenders. A big Leader flung me back out of the crowd.

Ordinarily I would have resented that bitterly. But I was too stimulated at the moment. I picked myself up and shouted again.

"My psychoses are gone—I feel like dancing!" I cried.

"Dancing? What's that?" asked the Digger.

"It's what people do for fun—like this," I told him.

I had never danced before but I had often watched people doing it and had always been sure that I would be quite good at it.

So now, in the silvery planet-light, I did a slow graceful waltz for them, circling around and humming a tune as I did so.

"You do it like this, only in couples," I explained.

THE Machs were enchanted by my performance.

"Say, that looks like fun! Let's try it!" cried a Crusher.

It extended its mighty pile-driver arm. I took it and—despite the disparity in size between myself and the huge Mach we performed a waltz by no means without grace—the Crusher following my lead a little uncertainly on its rambling caterpillar treads.

They all started to do it. The big Digger looked onto a Leader with its scoop and they circled unsteadily. Handlers, Tenders, Crushers—all of them were soon waiting ponderously in the planet-light. The ground shook violently under their rumbling treads and they all bellowed out the waltz-song they had heard me humming.

*"Sweetheart mine,  
You are divine—"*

I lost my Crusher partner when I fell into a hole. But I got up and was claimed by a Tender, which gripped me with its lines and whirled me around in dizzying fashion.

I vaguely glimpsed Gordon's face in-

side the window of the shelter, peering out at us in horror.

Then came catastrophe. The big Digger raised its voice in a reverberating thunder of anger as its Loader-partner was snatched away from it by the mighty pile-driver arm of the Crusher which had been my own partner.

"That Loader's dancing with me, Crusher!" roared the Digger.

"Says who?" retorted the Crusher.

For answer, the angry Digger with

helping of actinium were sobering my mind rapidly.

Instantly I realized that this was the chance to get away. I hurried to the shelter and through the airlock into it.

Gordon, again, shrunk from me in terror when I entered, "Come on—now's our chance to find our ships and get out of here!" I told him.

"I saw you out there?" he squeaked. "You're as mad as those Macks—drunk on—dancing—"

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### MOON OF THE UNFORGOTTEN

by

EDMOND HAMILTON

## FEATURING CURT NEWTON AND THE FUTUREMEN!

its huge scoop tore the Loader away from the other.

Instantly the Crusher loosed a blow with its pile-driver that smashed in half the girders of the Digger's side.

A howl went up. "The Crushers are trying to destroy us Diggers!"

All at once around me there raged a wild maelle of battering machines, huge girder-arms and scoops and metal tanks, battering at each other.

I, Grog, didn't have a chance in that battle of titans. A Digger's whirling scoop caught me and knocked me clear across the ore-barges.

I got up, badly shaken but with no metal fractured. In the silver planet-light the combat of the actinium-drunk-on Macks was a nightmare of huge battering rending machines.

My own aberration of overstimulation had left me. The shock and the fact that I hadn't been able to get a second

"I was only doing that to play along with them," I told him. "Get on that protective suit and hurry!"

Still fearful he scrambled into the suit. Then we went out.

The battle-cryal was at full height. The air was filled with raging howls and flying girders and scoops as the Macks hammered each other.

We skirted wide around the maelle and I led the way over the planet-lit plain in the direction I had seen my space-ship carried away.

"They'll have put it with your own ship," I told Gordon by our suit-communications.

My brain was aching badly from the over-stimulation of actinium energy. My limbs were shaky. All I wanted to do was never to see this moon again.

We found the space-ship and the ship. The Macks had tacked them into a cleft near the ore-beds. I was vastly relieved

to find Eek still cowering in a corner of the space-cel.

The little fellow greeted me with frantic joy.

I told Gordon, "Now get out of here and see that you keep quiet about all this if you don't want to be arrested for your unauthorized experiments."

"If I get safely back to Earth I never want to hear cybernetics mentioned again!" he said hoarsely.

"Especially," I told him emphatically, "don't mention anything I did here. If you were to tell tales about me I wouldn't like it!"

And I flexed my hands meaningly, glaring at him. "Don't worry, I won't give you away—I mean, I won't tell of your brilliant stratagem," he assured me hastily.

I saw him off in his flier, then took off in my own space-cel. I flew low over the work-base and looked down.

The battle was over. The Machs had succeeded in battering each other to pieces and there was only a great scrapheap of twisted girders, plates, treads and wheels.

I zoomed out away from D1a, pointed the space-cel toward Earth and opened the power wide.

Then I sat, with Eek nestled beside me, and waited for my brain to stop aching.

When I finally walked into the Moon-laboratory, Curt and Otha and Simon stared at me in wonder. I hadn't been able to smooth out the many dents and scars in my body and I knew how battered I looked.

"What in the name of the moon-imps happened to you?" Otha demanded.

I answered with dignity, "I have just gone alone through a terrible danger. Of course that wouldn't worry you."

Curt asked, "Whatever happened, did it help your complexes any?"

"Yes, it did," I answered, "I am glad to say that my dangerous psychosis is all gone."

I added, "You see, these Machs had run completely wild. I was obliged to use physical force upon them and I'm sorry to say that I practically demolished them all. Now Machs will have to be built but the old ones were thoroughly unreliable anyway."

"You demolished a crowd of Machs?" Otha cried. "Oh, no!"

"If you don't believe me go out to D1a and see for yourself," I retorted.

Captain Future nodded, "Of course—and the necessity of dominating these simple Machs would rid you of your inferiority complex."

I avoided his eye. "Yes," I said. "That's about it."

But later, when we were alone, Curt demanded, "Now tell me what really happened, Greg?"

I said, warily, "I would not if Otha should overhear—"

"I understand," he nodded. "You write it up for our case-book. I'll guarantee to keep Otha from ever seeing your report."

So I have written it. And I hope Curt's promise holds good. For if Otha ever reads this my life won't be worth living!

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# Love My Robot

By **ROG  
PHILLIPS**



Ken kept his eyes turned away from Jane's to avoid the threat in them.

Getting both the super-automaton and the girl was a big problem—but behavior specialist Ken Randard never did let the impossible stop him!

SO somewhere among a thousand humanoid robots with an I.Q. of seventy-five is one with an I.Q. of six hundred," Ken Randard, D.P.s., said. "And my job is to find it."

"If you can't," Chadwick Wright said, "we'll be forced to destroy the whole thousand."

"Maybe you won't get the chance," Ken said. "How many months has it had to integrate? Six months? It may already have recognized the problem of survival and be prepared for us."

"That's why we didn't waste any time about calling in the greatest behavior specialist in the country," Chad-

wick Wright, superintendent of General Robotics, said, "We discovered it yesterday during the inventory in the parts warehouse. One robig six hundred brain was missing and there was one too many robig seventy-five. We're still trying to find out how the switch was made and we're reorganizing the warehouse so it can't happen again."

Ken stood up and walked over to the windows. The sprawling grounds and buildings of General Robotics met his eyes. The ten acres of vats where the robot brains were formed by the infinitely slow ten months of crystalline growth were, he knew, underground in vibration-proof vaults.

The buildings above ground were factories and warehouses where the various types of robot bodies were assembled, each with its brain unit installed, and the training schools where the first integration of mind was carefully supervised and controlled.

"You see," Chadwick Wright explained, "if it had been a robig two hundred or less it would be easier to find it. The robot would be more likely to give himself away by trying to excel the others."

"I know," Ken agreed. "A robig six hundred would recognize its superiority almost at once. It would irritate its companions exactly while it worked out all the answers. Too bad there isn't some system of marking the brains so you can find him by his serial number."

"There isn't," Chadwick Wright said. "We can't put a number on them. Stamping or engraving would destroy the crystalline balance. Paint or ink would alter capacitances, and probably result in defectives. We've been stamping the packing cases but they're thrown away after the brain is installed. Now we're going to have different colored cases and store them in different sections of the r.o.b. warehouses."

"What are the robig six hundred brains used for?" Ken asked.

"They're used in interpretatory stations mostly," Chadwick Wright explained. "Also in extremely complicated machines of all sorts. Every one of

them, just as an idle pastime, solves the nature of basic reality in less than five years, unaided."

He asserted, "It took the human race until two thousand two hundred and forty-seven A.D. to do that—and then it took a man with an I.Q. of nearly six hundred to do it, with all the mass of data and experience the human race had accumulated."

KEN said, "I know," turned away from the window. "The human race is pretty slow compared to the mind of a good robot. That's why this mistake that placed a robot ordinariness brain, I.Q. six hundred, in a humanoid body was almost inevitable."

"If that robot gets away it will eventually take over—and then the human race will either be wiped out or placed in a secondary position as slaves of the robots. I'd almost say that was inevitable too."

"Sooner or later, if the human race plays with things that can destroy it, it will be destroyed. Why—" Ken smiled, "if you play the horses long enough you'll win one bet."

"Yes, I know," Chadwick Wright's face was suddenly tired and gray. "I've been in closer contact with this than you have, Mr. Rand. Every time I see some machine leave our factories with a robig six hundred brain in it I wonder if some protective device has been overlooked so that it will find a way to turn on us eventually."

"I know too," Ken said seriously. "Every time a robot servant has been brought to me for straightening out and adjustment to its environment and job I've been conscious of the terrible power latent in it—the power to outthink and outguess human beings. Even a robig seventy-five is potentially dangerous. It can go criminal just like any human being and some of them have."

Ken glanced at his watch. "I'd like to talk to the teacher that would have had charge of this robig six hundred during its first few days of integration," he said. "There's a chance—a very remote one—that she may remember

something that might point him out."

Jane Weaver looked at Ken Harard and saw a very pleasing mascaline face, dark hair, serious blue eyes, broad shoulders and six feet of well proportioned body, not over thirty years of age.

Ken Harard returned her critical inspection with hidden surprise. He had not expected to see an attractive girl, tall, almost beautiful, with chestnut hair and the figure of a Miss America. His preconceived notion of a teacher of low-intelligence robots was a plain middle-aged woman.

"Jane," Chadwick Wright was saying, "This is Kenneth Harard, the behavior specialist I called in to try to crack down that robot six hundred, Mr. Harard—Jane Weaver." His eyes began to twinkle. "Very popular with her robot students."

"I'm sure that's not all she's popular with," Ken said, accepting her warm frank handshake.

"I can see you know your business," Jane said, laughing. "I'm curious about your profession. What does a behavior specialist do, particularly?"

"He's a sort of field psychologist," Ken said. "An office psychologist has the patient lie down and start telling about how, when he was five years old, he was frightened by a leaf falling from a tree and so, when he grew up, he had a compelling urge to start forest fires."

"The behavior specialist, on the other hand, watches the man start a forest fire, and from that deduces that when the man was five years old he was frightened by a falling leaf."

"Is it really that silly?" Jane asked.

"No," Ken said. "Some of our work is even sillier. A woman wonders if her husband really loves her. She calls in a behavior specialist, who studies her husband without his knowing about it and gives her the facts as he sees them. Sometimes they aren't pleasant. Sometimes they enable a woman to change her ways so that she doesn't lose her husband."

"Or maybe an employer is worried

about some employee. He calls in a behavior specialist who secretly watches the man and finds out what is wrong."

"I got the idea," Jane said seriously. "Your job is to study the robots and try to figure out which one is the robot six hundred."

"That's right," Ken said. "And since he must have been one of your pupils I asked Mr. Wright to call you in so I could talk with you and find out if perhaps you might remember some small incident that might point toward him, or narrow things down."

"I can't remember a thing that would help you," Jane said. "But personally"—she took a deep breath—"I can't quite see what the big fuss is about. Wouldn't a robot with an I.Q. of six hundred be intelligent enough not to be dangerous?"

"I mean, if you let him know it was all right, he would go about his assigned life and content himself with just understanding things. He would be too intelligent to try to take everything in his own hands and remake the world."

"Well," Ken laughed. "I can't see any harm in letting him survive either. But an I.Q. of six hundred could be something pretty awful if it turned on the human race. We'd feel a lot more comfortable if we knew which one he is."

"BROWNING," Chadwick Wright said.

"I'm a little surprised at you, Jane. You sound almost as if you'd conceal the robot's identity if you knew it." He laughed nervously. "Perhaps you don't realize how serious this is. It could wind up with the robots ruling mankind and people taking the places of robot seventy-fives as menial servants and workers, while robot six hundreds were turned out in humanoid bodies by mass production."

"I hardly think you're sympathetic enough toward the robots to advocate scrapping the human race in favor of robots in the progress of evolution, are you?"

"Don't get me wrong," Jane said defensively. "The mistake has been made. I just don't think it's as serious a mistake as you think. The robot six hundred

will probably wind up as a janitor in a department store who secretly composes far better poetry than any human could. By the way, what will happen to him if you find him?"

"He'll be scrapped, of course," Chadwick Wright said. "Now that his mind is formed he couldn't be reconditioned for his intended function as the brain of some intricate machine."

Jane shook her head slowly. "To me that would be murder," she said. "I've worked with these robots. They're just as human as you or me."

"That's enough, Miss Weaver," Chadwick Wright said severely. "That robot six hundred broke must be found and destroyed before it can become a menace. We'll expect you to cooperate."

"I won't!" Jane said. She looked at Ken Ransard with a wordless appeal, then turned and ran from the room.

"I'm sorry, Dr. Ransard," Chadwick Wright said as the door closed on her back. "I didn't think this would happen. I thought—well, I don't know what I thought. But it didn't occur to me anyone would consider a robot emotionally like this."

"That's quite all right," Ken said, his eyes thoughtfully on the closed door. "She's correct in a way. It's just that we can't allow right to enter the picture. As an intellect I can recognize that robot six hundreds are superior to humans. As a human I can recognize that that improvement must be kept under control for the survival of my race. But I understand her."

"You see, a good part of my experience has been with the adjustments of robots to their role in society. I too have a deep respect and affection for them—as very human beings." He smiled at the door as though, by closing on Jane, it had become her.

The smile suddenly died. Ken turned to Chadwick Wright with grim decision in his eyes.

"I suggest you issue orders to destroy every robot that could possibly be that robot six hundred," he said quietly. "Do it right now, as quickly as possible."

"That's out of the question," Chadwick said. "Man, do you realize what that would mean? It would mean the company wouldn't be able to declare a dividend at all this year. I'd lose my job."

"You'll lose more than that if you don't," Ken said. "By now Jane's back in her classroom and that robot knows his existence has been discovered and we're going to look for him and try to destroy him. He'll be on his guard if you don't act at once."

"What makes you think that?" Chadwick asked skeptically. "You mean she knows which one it is and will warn him?"

"That's a possibility I'm not overlooking," Ken said. "But I think it more likely that he will know from her expression and her actions. It's obvious to me that he's been working on her emotionally so that she would react as she did at the first sign of trouble for him."

"Then she must surely know which one it is," Chadwick said, anger gathering in his eyes.

"No," Ken said. "He wouldn't do it directly. He would get the other robots to do it. Don't forget, their LQ's are only seventy-five. They would receive suggestions without trying to comprehend motivations."

"They're puppets in this show and robot six hundred is the puppet master, hidden among them, pulling the invisible strings. I'm afraid. I have a strong feeling that unless you destroy all the robots that might be him, and at once, he'll defeat us and get away."

"I'm sorry, Dr. Ransard," Chadwick Wright said. "I can't give that order. It would mean an outright loss of six million dollars besides getting further behind on our orders and contracts than we are already."

"I could have thought of that method myself. I called you in to solve this so it would cost only the one robot, not a thousand. I'll give you a free hand, see that every order you give is carried out to the letter."

"It will be too late," Ken said bit-

larly, "Maybe it's too late now. He'll be on guard."

"We'll have to risk that," Chadwick said. Then, irritably, "If you started to work on it instead of trying to make me do something I can't do you'll get ahead faster."

"Okay," Ken said, frowning at his feet. "Tell me a little more about the robots. Do they just go through standard schooling? Or do you use them around here in other capacities?—in the office, for example."

"We use them wherever we can," Chadwick said. "Janitor work, the simpler office tasks. Not all of them but some of them."

KEN asked, "What about the others?"  
A. Do you make a personal tour of inspection now and then to make sure they're progressing as they should?"

"Every robot that leaves here knows me," Chadwick said, a note of pride in his voice. "They know that I guide every step of their progress, from the crystallization baths that formed their brain right up to the final classes that teach them enough to be the equivalent of high-school graduates."

"That's very interesting," Ken said, taking out a cigarette and lighting it casually. "Then is all probability you have talked to this robot six hundred yourself at some time or another."

"Of course," Chadwick Wright said. "Say! That is something. Isn't it! To think that I've talked to it myself, not knowing that behind its eyes lurked an intelligence almost beyond anything a human could attain, hidden by exact imitation of the mannerisms and speech of robot seventy-fives. The—the drama of it!"

"Yes," Ken said dryly. "The drama of it! Our friend knows exactly what you will do and what you won't do. He knows all about you."

Chadwick Wright looked deflated.

"There isn't anything I or anyone else can do," Ken said despondently. "Let's take the self-preservation angle. Suppose we put on an act in which it seemed we were going to destroy all

the robots. The seventy-fives would go to their death if we ordered it. The six hundred would go just as willingly because, knowing you, he would know it was an act.

"What we've got to do is figure out some situation in which robot six hundred will react differently from the others. We can throw ahead of time that he will know it's a trap. He will also know exactly what a robot seventy-five would do. He'll probably be able to divine the full setup of the trap at once too."

"Then we might as well ask him to come in and listen to us make our plans," Chadwick Wright said, smiling.

"Not just yet," Ken said, returning the smile. "You see, there's one faint hope. So far I'm an unknown quantity to him. Also, being only six months old and having had very little contact with humans, it's possible he can be trapped through ignorance of what I'll do. It's a remote possibility but the only one there is."

"All he knows about me so far is that I'm here. He learned that from Jane Weaver. He's also learned from her by now what he already suspected that when he's found he'll be destroyed."

Ken shoved his hands in his pockets, turned his back on Chadwick Wright and stared out the window with a frown.

"I'm his unknown quantity," he said broodingly. "I wonder . . ." He turned to face Wright again. "I assume the robots are encouraged to lead a social life among themselves, play games, talk, make friends and so on?"

"Naturally," Wright said. "And they form little groups just like people. Their friendships often last after they leave the plant."

"Then our robot six hundred undoubtedly moves among them and keeps close touch with all of them," Ken mused. "I wonder if any of them know or suspect his intelligence? I doubt it. Or, if he's given himself away to them, he's probably covered that error by building up in them a sense of loyalty toward him as the Coming Robot."

"Look, Mr. Wright," Ken said. "I have a plan. It may not work out but it offers a chance. Announce to the robots in that group that an order has come in for a robot for exceptionally pleasant duties. What I want is for them to be brought in here three at a time for harmless questioning that has nothing to do with the existence of a robot six hundred in a humanoid body."

"The most vital part of the whole plan is that when I'm through questioning them they are to be taken to some other place rather than back with the ones that haven't been interviewed. If possible I'd like each group of three to be placed in a separate room and locked in."

"That can be done," Chadwick Wright said. "Do you mind telling me why?"

"Curiosity," Ken said. "I'm the unknown quantity. This robot-six hundred will of course know that it's my first move to trap him. He'll recognize the elements of danger inherent in this move. He'll also recognize that it's a chance to see me and make a quick study of me."

"The other robots will take your words at face value and think it's a chance to get a nice owner. If we work it right we could even carry the deception right on through and when we destroy that robot six hundred we can simply say he was the one that got the job."

"It sounds okay to me," Chadwick said. "I'll get things ready. What questions are you going to ask them?"

"You can be right here and listen," Ken said with a grin. "Put some of the other instructors in charge of the robots and have Jane Weaver here too."

"I'll send her in right now," Chadwick Wright said, winking knowingly.

JANE'S heels clicked defiantly against the floor as she came in. Ken concealed the admiration in his eyes beneath an air of professional-casualness.

"Mr. Wright said you wanted me in here," Jane said.

"I do and I don't," Ken said gravely.

"You know, Miss Weaver—Jane—we behavior specialists are at a disadvantage when it comes to our own lives. Our tools in trade are the things that a person wants to be genuine and spontaneous."

"Our eyes are trained to study the behavior of others, and from that behavior deduce the motives and secret thoughts behind it. People don't like it. They resent it. You resent it too, don't you?"

"Now that you've expressed it," Jane said, surprised. "Yes, I do have a definite antagonistic feeling toward you. I think I dislike you more than any person I can ever remember taking a dislike to."

"You do, don't you," Ken said. "I think I can understand it too. I used to have the same feeling toward my father."

"Your father?" Jane echoed.

"He's been dead a long time," Ken said. "He died when I was ten years old. But I can remember just as if it were yesterday how he used to fix his eyes on me and puff thoughtfully on his pipe while all my inner secrets seemed to stand out for him to see. Sometimes I hated him."

"Hated your father?" Jane asked. "But why?"

"It's a little hard to place in words," Ken said. "I can make you see why very vividly in quite a simple way though."

He took a quick step toward her and took her face firmly between his hands. While she tried to struggle he kissed her on the lips. The kiss lasted all of ten seconds.

When he released her and stepped back she was gasping for breath, her face slowly turning crimson.

"You see," Ken said as if nothing had happened. "I didn't really hate him or dislike him. I resented his ability to know what I wanted to keep private. A person likes to feel he's not transparent—a girl especially."

"It's the desire for a sense of security that comes from being able to hide. For most people there's no other secu-

ridy. But it can't compare with the security that comes from not having to hide."

Jane had raised her hand as if to slap Ken. Indecision held it there while anger, bafflement and inner conflict struggled in her eyes and on her face.

"Hiding—always hiding," Ken said. "For a few years after my father's death I was the most lost creature imaginable. There was no one who could know my thoughts and understand them and puff a pipe at me while he showed his understanding and love."

Jane looked at Ken's eyes for a long minute while the crimson on her face slowly receded and the lines of inner struggle on her face smoothed out.

They were both startled by the sounds of footsteps outside the door. Ken glanced at the door, alarmed, then laid a hand on Jane's shoulder and whispered.

"Face it," he said warningly. "One must die."

\* \* \* \* \*

The last of the robots came in.

"Sit down at the desk," Ken said in tired tones.

When the robot complied Jane laid a blank sheet of paper before the robot and gave it a pencil.

"Write down the names of five of the robots in your group," Ken ordered. "Make it quick as we want to get this over with."

The robot looked at him blankly an instant, then hastily wrote five names down.

"Your own name at the top," Ken ordered. "That's all now."

The robot was led away to be locked up with two of its companions.

"Now," Ken said to Chadwick Wright. "We have all the data we need."

"I still can't understand what good it will do," Wright said. "You just had each robot sit down and write five names as fast as it could. I can understand that. It was obvious. Each would write the first names that came to mind and those names would be the ones most familiar, its close friends."

"That's right," Ken said. "So with

most of these lists we can check the names against the lists written out by those names and find they tie together. If Joe put Harry on his list Harry will have put Joe on his."

"Yes, of course," Chadwick Wright said impatiently.

"People and robots tend to group into small circles of friends," Ken went on. "Our robot six hundred is different though. What I want to do now is feed this pile of data to your office problem brain with certain specifications. It will give us the name of one of the robots. That will be the one for you to destroy."

CHADWICK WRIGHT nodded. "I'm beginning to understand now," he said. "I'll have one of the office boys place the pile of names on the feeder belt. Would you instruct the machine operator as to the specifications you want fed into it?"

"I'd rather feed the specifications myself," Ken said. "I'd rather be the only one that knows the name. We're probably in greater danger than we suspect. I'm not at all sure this robot six hundred won't gain the upper hand in some way. He has figured out by now what I've done and knows he's trapped."

He kept his eyes turned away from Jane's, avoiding the torture in them. During the hours that the robots had come and written their lists of names he had seen her eyes on him—had read in them the growing determination to hate him when this was over.

One of the office workers came in and carried the thousand sheets of paper out to place on the feeder belt. Chadwick Wright followed. Ken held the door open for Jane.

In the main office he sat down at the equation board of the calculating machine and set up his equations in symbolic logic. When they were complete he pressed the button that started the machine.

The thousand sheets of paper shot along the feeder belt one at a time. Each paused under the scanner for a hundredth of a second, then sped on to the ejector.

The last sheet passed through. There was nearly five minutes of brooding silence after the feeder belt shut down before the card slid out of the answer slot.

There were five names on the card. After each name was a series of letters relating it to the symbolic equations Ken had set up.

Ken's eyes settled on one of the names. He knew now beyond any shadow of doubt the name of the robot six hundred. He looked up from the card in his hand.

Jane was watching him, her eyes black with despair and defeat. Chadwick Wright was watching him tensely.

"Do you have it?" Wright asked.

Ken nodded. "I'll write a name on a slip of paper," he said. "You know where each of the robots is so there'll be no mistake! You'll be able to hand this name over to man who will be sure to do it quickly before the robot has a chance to realize?"

At Chadwick Wright's nod Ken tore a blank sheet from his pocket note pad and scrawled a name on it. Chadwick Wright took the paper and left the room.

While he was gone Ken remained where he was at the calculator. Jane sat stiffly erect, her face drawn and white, her eyes staring blankly at the far wall. They were alone.

Ken watched her for awhile. Finally he leaned forward and broke the silence. "There's a possibility I'm wrong," he said gently. "I would regret a mistake. Now that it's too late, if I give you the name of the robot six hundred, will you tell me if I was right?"

Her eyes turned on him in contemptuous silence.

"It was Walter, wasn't it?" Ken asked and the flash in her eyes told him he was right.

"How would I know?" she asked expressively. "Do you really think I knew which one was the six hundred?"

"You really believed that," Ken said, ignoring her remark. "About Walter being more likely to become a great poet than a revolutionist?"

"Does it make any difference—now?"

Jane asked, her voice breaking.

"Yes," Ken said. "You've got to believe that I feel the way you do about it. I had a job to do. If I'd refused to do it they'd have called in someone else. If the next behavior specialist couldn't have cracked it they'd have been forced to destroy all those robots instead of only one. It's not my choosing that a robot had to die."

"Let's get something straight," Jane said coldly. "You had a job to do. You did it. All right—now you can collect your fee as soon as Mr. Wright gets back and home. I don't want to see you again ever. Nothing can make me ever want to see you again. Is that clear?"

"It's clear that you love me, Jane," Ken said.

"Love!" Jane said incredulously. "You don't know the meaning of the word."

THERE were footsteps outside the door. It swung open and Chadwick Wright came in.

"Well, it's all over," he said grimly. "There was no question about it. When we stepped into the room he said he had been expecting us."

"Then I can leave now?" Ken asked quietly.

"Yes, of course," Chadwick Wright said. "You must be quite tired. I know we all are. It's been a trying ordeal."

"About my fee," Ken said.

"Your fee, of course," Wright said. "I can make out the check now, or if you send us a bill it will be taken care of at once—whichever you choose."

"I had something else in mind," Ken said casually. "My fee is rather steep."

"I know it will be steep," Wright said, showing signs of irritation. "We're prepared for that. We called in the best man in the country because, frankly, if we didn't it might cost us millions otherwise."

"What I had in mind," Ken went on, "was that I have need of a robot servant and as long as I was here I thought I would kill two birds with one stone. I'd buy it at the retail price and save



you considerable expense on my fee."

"Fine," Chadwick Wright said. "Look them over. Take any of them you want. They're all back in their schoolbuilding now."

"Okay, Mr. Wright," Ken said. "I'll do that and then leave. My car's right out in front in the reserved parking area."

He studiously avoided looking at Jane as he left. In the hall he walked quickly to the exit and across to the building housing the robots.

There would be no delay. Mr. Wright was phoning ahead of him to clear the way. He could glance over the robots, pick the one he wanted and leave quickly.

FIFTEEN minutes later, he slid behind the wheel of his car and started the motor. The robot he had chosen sat in the back seat, its face relaxed. Ken backed the car out of its parking place, then drove slowly toward the front entrance of the administration building, an expectant look on his face.

A figure emerged from the entrance and ran toward the car, waving frantically. It was Jane, her coat on her arm.

When Ken stopped she opened the door and slid in beside him.

"Aren't you being rather foolish?" Ken asked, smiling. There was a malicious twinkle in his eye.

"I don't think so," Jane said. "And anyway, a girl has to act foolish sometimes in her life. Why were you going so slowly? Were you expecting me to come out?"

Ken turned out of the parking lot, pressing down on the gas as his car entered the highway to town.

"Yes," he said positively. "I thought you would want to come along as soon as you learned it was one of the sub-human robots that was destroyed and that Walter, your robot six hundred, was the one I was taking away with me."

"You're too smart," Jane said.

Ken looked at her deliciously pouting lips. He darted a hasty glance at the highway ahead and leaned over to kiss them. Jane started to pull away from him. Her eyes widened in alarm at the sight of an oncoming car they were veering toward. She gave Ken a quick kiss.

His eyes darted back to the highway. He pulled the car into its own lane just in time to avoid a wreck.

Walter, in the back seat, having an IQ. of six hundred, sighed and said nothing.

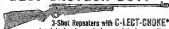
"Not as smart as Walter," Ken said, picking up the conversation. "He figured out what I was planning—even which one of the robot seventy-fives I would pick for the tall guy—and coached the victim on what to say to cinch things so that Chadwick Wright would be certain he had actually destroyed the robot six hundred."

He grinned as he added, "Walter knew we were falling for each other and that I had recognized it would have to be a case of love-me-love-my-robot. He's going to make me a good assistant behavior specialist."

They turned their heads to look in the back seat at Walter. Their smiles vanished. They looked wide-eyed at each other, then laughed in uproarious delight.

Walter, lost to the world, was scribbling poetry.

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# ROAD BLOCK

**An equation changed Burton from a man into a god with power to create and destroy—but the price was high.**

**T**HE phone chimed, a soft musical tinkle. The three men glanced at it. Since this was his study, Randolph Burton picked it up.

[illegible]

"English speaking. Can you come down to the hospital, please?"

"Sure. What number?"

"To sub—" Houston could feel the doc-

By ROBERT MOORE WILLIAMS

ter hesitate and try to choose his words with care. "Land is here," English finally said.

"Land!"

"Yes."

"What's he doing there? Is he—"

"Yes," the doctor said. "Dead."

"The devil!" Burton gasped. "What's wrong him? How could he get hurt here?"

"I don't know how he got hurt and I'm not sure what's wrong with him." Preftulness crept into the voice at the other end of the wire. "But he seemed enough to ask for you and he acted as if seeing you was important to him. Can you come right away?"

"Right away," Burton answered. He hung the phone back on its cradle. Jerome Feldman and Colonel Martinson looked questioningly at him. Colonel Martinson was security officer of Blue Mesa. Feldman, like Burton and Land, was a mathematician, one of the exclusive corps of scientists gathered together here.

"Gentlemen, will you excuse me? That was the hospital. Something has happened to Ed Land and they want me."

"To Ed Land?" Feldman rose to his feet, protesting. To him and to everyone else at Blue Mesa, Ed Land walked on the legs of a giant that carried him far above the heads—and the comprehension—of the average run of men. "But what—"

Randolph Burton, already out the door, didn't even know the question had been asked. Something had happened to Ed Land. To Randolph Burton this was almost the equivalent of saying that something had happened to God. He headed for the hospital on the run, moving through the underground passages of Blue Mesa as fast as his long legs would carry him.

Of all the safe places that have ever existed on earth, Blue Mesa was considered by those who knew to be the safest. Safe physically in the sense that it was hidden from the enemy, safe also in the sense that even if the enemy penetrated the elaborate disguise that hid it, it was still so deeply buried under-

ground that not even the slightest atom bomb could do more than jar the seismograph equipment.

And—what was far more important and more difficult to achieve—Blue Mesa was safe mentally. Like brooding hens watching wayward mental chicks, a staff of psychics watched over the mental health of all who worked here. The chemical composition of the food, the way it was served, the air, the colors of the walls, the flooring material in the corridors—not quite asbestos but nearly so—all these things and a thousand others had been planned to produce a balanced mental horizon.

FANTASTIC efforts had gone into hiding Blue Mesa. The very jack-rabbits around this hidden laboratory were counted, each coyote had his will recorded on tape, each eagle drifting in the serene blue above had his flight course plotted, all by automatic instruments that watched and listened with the thousand eyes of night.

Decending and outgoing personnel and freight came and left by 'copter after darkness and no outgoing man ever knew within fifty miles of where he had been. The pilots who flew the 'copters? Robots. The technicians who built and repaired the robot pilots? No technician ever saw more than a part of the flight orders built into the robots.

There was war in the world but it was far away from Blue Mesa—purposefully so. Neither strategy nor tactics was ever discussed here. No one here was ever taught how to deploy an army, how to conduct an amphibious landing, the purpose of strategic bombing. Protected and carefully guarded Blue Mesa served a different purpose.

Standing outside, Randy Burton was aware that he didn't want to enter the door of this hospital. He was aware of a fruitful wish to run away, to run somewhere, anywhere, it didn't matter much. The escape mechanism, he thought—something in him seeking a hole to hide in.

The impulse to hide was older than the human race. In fact, if the impulse had

been left out of the human animal there never would have been a human race. The animal somewhere along the way would have gone down the gullet of a saber tooth tiger. So the impulse to run had saved the human race and might save it again.

Burton frowned, despising such thinking. To say that the escape mechanism had saved the human race implied purposeful direction of that mechanism. The only purpose, so far as he knew, that the human mind had ever discovered in any aspect of the universe had been put there by the human mind itself—in other words was a projection of man's desires, a reflection of something inside of man, not outside of him.

With every atom of his being, Randolph Burton wished that it were otherwise. He wished it as fervidly as he wished he didn't have to go through this door. There was something in this hospital that he didn't want to see. The tone of English's voice had said it was here. Fears deep within him told him it was here. The door opened.

A white-capped nurse stood before him. "Come in, Mr. Burton. Dr. English is expecting you. If you will follow me, please."

She turned away and he followed her down a spacious hallway painted some restful color that his partly colorblind eyes would never reveal to him. The knowledge that there were colors he could not see was always a vague irritation in the back of his mind.

But if he couldn't see the color of this hallway he could enjoy the air here. He sucked in great mouthfuls of it, always grateful for the way this place smelled. The old-time hospital odor, the burning tang of disinfectants, the harsh irritants to the nose, were not here. This hospital smelled of spring. There was a hint of the fragrance of wild honeysuckle.

Somewhere his deceived ears reported the sound of running water like a spring brook dashing over stones, a pleasing sound. In this place sick men felt younger—it was spring here—and often felt better for no other reason than this simple ease. On these walls of unknown color

were invisible words carrying such messages as, "I'm feeling fine today."

No human eye could ever actually see the words. They were below the threshold of perception. But all eyes caught fragments of them via the process of subliminal perception. Somehow the content of the message got through to the mind with the result again that sick men began to feel better. Psychosomatic medicine, they had once called it, the treatment of the total personality.

The minds that worked in Blue Mesa were the finest pieces of mental equipment available in the American hemisphere. Because fine equipment deserves fine treatment they got the best.

The nurse opened a door. "Mr. Burton to see you, Dr. English." She stood aside while Burton entered, then quietly closed the door. Dr. English looked up from a reel of film he was studying through an enlarger. A tall man, serious, with so keen a mind that Burton had always wished English had gone into physics instead of medicine, English was frowning now.

"What's up?" Burton spoke.

THE doctor glanced at the clock. "A little over 24 hours ago they brought Lund in here. He had been found in his study, his head on his desk where he had been working, apparently asleep. When they could not rouse him they brought him here."

"He's alive?" Burton spoke quickly.

"Yes—barely. His heart beats and he breathes. His heart action is growing weaker and his breathing is slowing. At first I thought it was cerebral hemorrhage but there is one thing wrong with that diagnosis. Lund went through a routine physical checkup this afternoon.

"I have the results here—blood pressure, heart action, everything else was normal. That pretty well lets out cerebral hemorrhage but I have just made electroencephalograph tests and the brain waves I got are similar to the brain waves we get after performing a lobectomy."

"A lobectomy?" Burton tried to remember the meaning of the term.

"Brain surgery," English explained. "The skull is opened and the frontal lobes are partly disconnected."

"I remember now," Burton interrupted. His mind made the obvious connection and the question popped unbidden from his lips. "Has somebody been cutting on Lund's brain?"

English was silent, regarding him with watchful thoughtful eyes as if he was wondering if here were his next patient. Burton made a hasty gesture with his hands. English, saying nothing, continued to regard him in wary silence.

"To heck with what you're thinking," Burton said. "It's my job to think new thoughts. Just because a thing is impossible is no reason why I shouldn't think about it. Nothing is impossible, it's only highly improbable—ten times high minus ten improbable."

"In this case you say you get a brain wave similar to the brain waves after a lobectomy. I know it couldn't happen but your brain waves indicate the damage has been done. How was it done?"

The doctor pressed his head forward into the palms of his hands, rubbed both eyes like a man resting his vision preparatory to looking again at an object he has seen but hopes he will not see again when next he looks. He looked up.

"I don't know how it was done. Why don't you fellows be reasonable? It's hard—"

"We don't know the reasonable from the unreasonable," Burton answered. "Nor the is from the is not. We can't be reasonable." Fretfulness sounded in his voice; the echo of a persistent uncertainty. "What did he want with me?"

"He said something about a big gun and that you would know about it. Do you know anything about a big gun?"

"No?" Burton was thunderstruck. A big gun! Even the idea appalled him. "I don't have the ghost of an idea."

"Let's go see him," English spoke. He rose to his feet. The bewildered Burton followed him from the room.

Ed Lund was a still, wan figure stretched out under a sheet on a white bed. In a chair beside the bed a special nurse sat watching him. Burton had the

impression that an earthquake would not get her eyes off the still figure on the bed but she rose when the two men entered. Lund lay on the bed—just lay there. His breathing was not labored and he did not appear to be in pain but only the slow rise and fall of the sheet showed that he was alive.

Randolph Burton was silent. Here a giant had been brought low. Perhaps Lund's geometry was not quite as well known as Riemann's but his took up where Riemann's left off. It was the geometry of space and hyperspace, in which the sum of the angles of a triangle was equal to more—or less—than two right angles.

Lund had taken the equality sign out of his equations. Building a bridge from the known to the unknown, the equality sign says that so many unknowns don't with in such and such a manner add up to such and such a known. Thus knowledge progresses laboriously from the known to the unknown—and reveals the underlying purpose of the human mind—to know all and to control all.

Lund had said that there was nonsense in this. Why not work directly with the unknowns and describe the relationship of the various factors within an isolated area? Whether you knew them or not did not matter. As long as you could describe them and fit them into an equation you knew all that was necessary.

Few people understood what he was talking about—when he talked, which wasn't often.

"Has he shown any change?" the doctor spoke.

"No, Dr. English. He hasn't moved since you left."

English stepped beside the bed, found Lund's wrist, counted the pulse. His face showed nothing. From the clip of his white jacket he took a pencil flashlight, which he passed slowly back and forth in front of Lund's eyes. Lund's head did not move but the eyes seemed to try to follow the light.

"Can he hear us?" Burton asked.

"I don't know," the doctor answered. "Apparently he sees the light but that

doesn't prove he hears us. You can try."

"Land," Burton spoke.

The mathematician lay without moving. The sheet seemed to rise and fall a little faster. The doctor reached again for the wrist. "His pulse beat picked up when you spoke. Speak to him again." Excitement crept into his voice.

**B**URTON leaned over the bed. "Land!" His voice was loud and sharp. The blank eyes of the mathematician seemed to draw slowly into focus.

"He is hearing you," English spoke.

"Keep it up."

"Land!" Burton screamed. Land's head moved.

"Lander," English said. He was breathing rapidly now. "This is close to a miracle."

"Th!" Burton said, confused. "A miracle!"

Beads of sweat had appeared on the doctor's face. "The tests show actual brain damage. If you blow up a central switchboard and then discovered that somehow you could get a call through you would call it a miracle."

"Oh," Burton said. What English meant was that an improbability of the order-of-ten-high-minus-ten-had-occurred. You could call it a miracle if you wanted to. "Land!" he shouted.

Land blinked his eyes. Life flickered in them and deep within the pupils recognition showed as a glinting light. Land's lips moved. His whisper was as frail as a voice from spirit land. "Randy."

"Land, what happened?"

"What—did something happen?" For a moment confusion showed in Land's eyes and Burton realized that the man had no memory of the event that had brought him here and probably did not even know where he was. Land tried to lift his head from the pillow. The effort failed.

"Something—wrong." His mind or what was left of it was trying to pick up familiar phrases. His eyes sought Burton, asking questions. Why was he here in this bed? Why couldn't he sit up? What had happened?

"He doesn't know what happened!" English spoke.

"Randy—"

"Yes, Ed."

Again Land tried to sit up. This time he made it. As though the victory gave him strength the confusions and the questions vanished from his eyes. "Randy—" Strength crept into his voice. "I've found it."

"Found what?" Burton spoke quickly.

"The ultimate weapon, the Big Gun we've all been looking for here at Blue Mesa."

"The what?" Burton spoke. Incredulity sounded in his voice. They weren't looking for big guns here at Blue Mesa, not directly anyhow. They were looking for new basic ideas. The discovery that nitro, charcoal, and sulphur would explode when properly mixed had been a basic idea. All the host of weapons from bombards to rifled cannons had been developed from this basic discovery.

The equation  $E = MC^2$  had been such a basic idea. From it had been developed all the variety of atomic weapons. Once the idea was put down on paper the engineers could develop it. Development took sweat, the basic idea took genius—and complete freedom to probe into any dark corner where the mind led.

"The big gun?" Land whispered. He was sitting up and looking straight at Burton but Randy knew the mathematician wasn't seeing him. Land's eyes were not focused on him. They were looking through him, seemingly toward lands that lay far away.

"Only it's not actually a gun, Randy. Of course you can use it as a gun if you want—but it would be a shame if you did. It's bigger than a gun!" Excitement crept into his voice and with this excitement came a kind of raspy catch.

Across the bed the doctor made frantic motions to Burton to shut up. Burton and Land both ignored him. What did it matter to be alive when a giant was talking of big things. "What do you mean, Ed?"

"We are what we have always thought we would be some day—Lords of Creation," Land whispered.

"Hype." English spoke tersely to the nurse. "On the double." His hand grabbed Land's wrist. For a second he counted a pulse rate, then he spoke again. "Randy, beat it."

"Of course," Burton finally realized what might be happening. He started toward the door. Land's voice caught him and pulled him back.

"The equations on my table, Randy. Get them! They are the basic equations of manipulation of the protein molecule."

"Burton! Ouf!" The doctor spoke like a drill sergeant.

"Get the equations, Randy," Land spoke. "But watch—watch—" Land's eyes fixed themselves on Randolph Burton and looked through him to worlds far away. He sighed. His head dropped forward on his chest.

"Okay, Randy," English said. "You don't need to leave."

"What?"

"He's dead," the doctor said.

"I'm sorry. I should have left. I—"

"Don't blame yourself," English spoke. "You didn't cause him to die. Something else did."

He let Land's head fall back on the pillow, slowly began to pull the sheet up again. The nurse came running in with the hypodermic. English motioned her away.

IN death, a giant looked no bigger than an ordinary man. Randy Burton went directly to Land's study. Done in soft tones of red, dimly lighted, with book-lined walls, the study seemed a place where any man might sit and ponder.

The picture window was a landscape, a breath-taking panorama of snow-covered mountains rising above dark pine forests, an illusion so cleverly contrived that a man sitting in this room could easily imagine he was actually looking out from his window at white-topped mountains fading away into the distance peak by peak.

So far as Randy Burton could tell Land's study was just as it had been left. On the desk were scattered sheets of paper—the equations.

Burton folded up in the chair. His fingers groped automatically for a cigarette. He spread the sheets in order. His heart beat picked up. As his mind picked up the meaning of the short-hand symbols written here he forgot everything except the equations before his eyes. Land and what had happened to Land, everything except the breath-taking immensity of the concept expressed here, was forgotten.

Here the long search ended.

Here the far-removed descendant of the langfish, the ancestor of all mammals who first crawled out of the sea and made the first step toward becoming an air breather, here this fish reached his final destiny. Perhaps that destiny was implicit in the first gulping lungful of air ever taken by a living creature on this planet. Randy Burton didn't know about that and didn't care. He was following the footsteps of a giant.

Put into words the equations demonstrated a method by which mind could control, manipulate and shape matter, perhaps create matter out of non-matter. They revealed a way by which the thought forces themselves could act at a distance, the action taking effect not on molecules, not on atoms, not even on protons and electrons—but on the subtle as yet un-named forces out of which protons and electrons themselves are built.

These equations developed the geometry—a poor word but the only possible one—of the complex protein molecule of the brain itself. The lucid flashes of foresight, the intuition by which a difficult and obscure problem is suddenly solved, were explained here. The working of the brain in an equation—this Land had accomplished.

And something more.

This something more was what made Randy Burton gasp. At first he hardly dared believe it but as the idea was rammed home to him again and again belief was forced on him. With these equations any man could use his own mind to create anything he desired—or to destroy anything.

Was this magic? Randy Burton's conditioned mind detoured cautiously

and carefully around the word. This was not magic but it was the goal that had been sought by all magicians who ever practiced the dark art. What the magicians had tried to do, by means of potions, spells, and words of power, Land had done. Or had he?

Being what he was Randy Burton's mind moved in a set groove, automatically deciding for him that theory had to be decided by experiment. No amount of finely drawn theory was worth two hooks in a whirlwind until it had been subjected to test. Burton knew what he was going to do. But first he got up and locked the door.

Land's equations were explicit. They revealed exactly what had to be done and how to do it. At first Randy was confounded and a little frightened because no apparatus was needed, no humming electrical generator, no gasoline motor, no hulking atomic pile behind its lead and concrete shields, no acid bath, no beam of electrons, no X-rays. And no tools—the protein molecule of the brain itself was the only tool needed.

The energies used were apparently microscopic at the point of origin and they seemed to act as a catalyst, releasing and controlling stronger energies. They moved from the point of origin to the point of application through extraordinary space. This was the word that came to Randy's mind though subpace or hyperspace might have been better words.

All of which was of no importance whatsoever.

The important thing—the utterly important thing—was what the equations could do.

And could they do it?

Randy's forehead furrowed into a Y and the lines of concentration deepened on his face. This was the test, the acid bath, of theory. He decided he would create in the air above Land's desk a small globe.

As he did what the equations said he had to do there sprang into existence above the desk a fuzzy patch of misty light.

Inside his brain he was aware of a

sharp flash of pain, a sudden, but microscopic jolt of anguish that was gone as quickly as it had come. He ignored it. Under the pressure of the excitement nothing in him he would have ignored death itself. He took control of his thoughts, directing them.

The patch of light dimmed. It glimmered with the sparkle of myriads of microscopic jets of radiance, darkened and intensified flaming. While he stared at it it became a globe about six inches in diameter. It hung there in the air.

The elation in him was like the sound of stars singing in the heavens. The equations had passed the acid bath.

**H**IS will was to complete the globe. Under the pressure of the energies in his mind, it began to turn. He was not satisfied. It was not complete. He directed the work to go forward. The work went forward. He lost all track of time. When he had finished there hung in the air above the desk a miniature replica of the earth.

It was finished to the final detail. Ice caps sparkled at the poles. There were the dark masses of the continents, the seas of blue green, there was even an atmosphere, with rain clouds.

In Randy Burton at this moment were two feelings, the first, an elation greater than anything he had ever known, the second a compelling sensation of urgency.

The elation held him. In this moment he was not a man but a god. All power was in his hands. The man who understood Land's equations had the power to loose and to bind, to create life, to destroy it. These powers were within these equations—this power, really.

It was all one power though it took a million—or ten million—forms. The energy of the burning matchhead, the chemical energy of fire, the internal energy of the atom, these energies were different aspects of the same basic energy.

The power to create and to destroy, the power to "annihilate the sorry scheme to bits and remould it nearer to our heart's desire." This was here. Burton



knew it was here. And he was not a man, he was a god. He had followed in the footsteps of a giant.

The consciousness of the power he possessed rose like a thunderclap in his mind. He knew these equations represented the link between mind and matter, that in one sense they were the long-sought equations of the unified field, which sought a mathematical expression that would unify all of the universal forces.

But these equations, unifying all forces, reduced all energies to one. In essence they eliminated the meaning of the word "force" and the word "matter"—and expressed the concept basic to both.

"If wishes were horses beggars

tration deepened on his face.

Again he felt the seething touch of pain somewhere in his mind. He waited for it to go away. It did not go away. It became stranger.

It flared up like a sudden electrical storm and in a split second grew to the violence of a miniature hurricane. To Randy Burton it seemed that knives were suddenly cutting his brain apart. He clutched his head and slumped forward across the desk.

\* \* \* \* \*

In the adjoining room three men watching every move he had made took their eyes from the scanner and jumped to their feet. Colonel Martinson was first through the door. Jerome Feldman and

#### COMING NEXT ISSUE

## THE ODYSSEY OF YIGGAR THROIG

a Novellet by C. H. LIDDELL

would ride"—it had in these equations been given scientific form. Any beggar who understood them could ride any horse he chose. Any astronomer who knew them could build a space-ship capable of flight to the farthestmost stars.

"This is the tool God used in building the universe," Randy Burton thought. He was not a religious man, for religion meant to bind and every impulse in him was to achieve freedom from binding. But if he was not religious he was reverent. And in this moment he was scared.

He had the impression something was watching him from behind. As the thought came to him he jerked around.

Nothing was there—nothing that he could see anyhow. He wiped the sweat from his face and wished there were some way to wipe it from his soul.

Above the desk, the miniature globe turned majestically. He saw it was still incomplete. It needed a moon.

He grinned. To the god who could create an earth, creating a moon was no trick at all. Again the V formed on his forehead and again the lines of concen-

tration were right behind him.

The locked door of the study stopped them for a few minutes. An axe from the fire-fighting equipment on the wall solved the problem of the door. They were in the room.

Randy Burton stood with his hands on the desk. In front of his head the tiny globe turned majestically.

"Randy?" English gasped.

There was no answer. Randy slumped into a chair.

The doctor moved around the desk and made a swift examination, knowing what he would find before he found it. Martinson and Feldman stared at the tiny globe.

"What is that thing?" the security officer spoke. He didn't know what it was but he was responsible for the security of Blue Mesa. Slowly with the handle of the axe he poked at the turning globe. The axe touched it.

LIKE a spinning top that has been touched and thrown out of balance the little globe faltered and began to wobble in its orbit. The instant it wob-

had gravity reached greedily and hitherto forbidden fingers for it. The globe fell on top of the desk.

But the energy of motion it still possessed. Spinning like a top, leaving a muddy path behind it, it wobbled to the edge of the desk, slipped from it, bounced erratically across the floor and came to rest in the corner of the room.

In the quiet study there was a new sound, a soft whispering.

Lifting a haggard face, Randy Burton stared at the little globe. It was ruined now beyond repair. It was a chunk of round mud. At the sight, tears ran down his cheeks and from his lips there came again the plaintive whispering cry, like a child who has lost a favorite toy or a god bereft of his first creation. The doctor quickly bent over him.

\* \* \* \* \*

Later, the top brass and all the scientific personnel of Blue Mesa were gathered in the main lecture hall. Dr. English reported first the facts of the death of Lund and Burton.

"In each case autopsies revealed that the frontal lobes had been cut into microscopically small particles," the doctor stated. "If there is such a thing as a small-scale atomic explosion I would say that such an explosion had taken place in the brains of these men."

English sat down. There was a stir and a rustle in the room. Jerome Feldman rose. The stir fell into quick silence.

In one hand Feldman held sheets of paper, in the other a six-inch lump of mud. Clearly, in a tone of voice which he was determined to hold firm, he told what he had seen happen, how the globe had come into existence, how Burton had died. Then, holding the sheets of paper, he told the story of Lund's equations.

In that listening room there was no sound; no cough, no shift of restless feet, no movement of any kind. It was as if the listening men were afraid to move. Then someone spoke slowly.

"Do you mean to say that those equations reveal a method by which anyone can will an object into existence?"

"I do mean that," Feldman answered.

"If we wanted to will into existence a super atom-bomb, we could do it?"

"I'm almost sure we could."

"If we wanted to will into existence, say, a man, we could do it?"

"I think so," Feldman answered. "It would be mostly a matter of knowing exactly what we wanted. The globe was poorly constructed, mostly of mud, probably because Burton did not know what else to make it of.

"In the case of a man it would be necessary to know the complete function and proper placing of every cell. But presuming we had that knowledge—and we can get it—the man would come into existence."

He paused. No more questions were asked. His voice came again. "I think we have here the ultimate key for which all of us have been unknowingly searching all our lives. A scientist is a man who strives to understand the operation of nature and of natural laws. His purpose, of course, is prophecy, to foretell what will happen but beyond that purpose there is another—to control.

"These equations reveal an ultimate control, they reveal a method by which the protein molecules of our brains can control the basic creative energy of the universe itself. This was Lund's discovery. Any concept that we can imagine we can create."

The room was very still. The silence was broken by a gruff voice speaking. "What's holding us? If we have that kind of power why aren't we using it?"

"A road block is holding us," Feldman answered. "Gentlemen, we have the key to creation in our hands but the minute we use it we run straight into a road block and destroy ourselves. Lund discovered and used it. The atoms of his brain exploded. Burton used it and died. Gentlemen, under the pressure of the creative act the protein molecule itself is unstable. It breaks down. It destroys itself."

His voice rose. He felt sweat on his face, saw it on his hands. "Gentlemen, it is as if God Himself, envisioning the future on the day of creation, saw that



# TOUGH OLD MAN

## CHAPTER I

### *Tractor Take-Off*

**T**HE young officer named George Moffat was inspired, natty and brilliant that day he stepped down from the tramp spaceman to the desolate plains of Ooglaah. Fresh from the Training Center of the Frontier Patrol in Chicago, on Earth, newly commissioned a constable in the service, the universe was definitely the exclusive property of Mr. Moffat.

With the orders and admonitions of his senior captain—eighteen light years away—George Moffat confronted the task with joy. Nothing could depress him—not even the shoddy log buildings which made up Meteorville, his home for the next two years—if he lasted.

But he'd last. Constable Moffat was as certain of that as he was of his own name. He'd last!

"This is a training assignment," he had been told by the senior captain. "For the next two years you will work

with Old Keno Martin, the senior constable in the service. When you've learned the hard way you can either replace him as the senior constable or have a good assignment of your own. It all depends on you.

"You'll find Old Keno a pretty hard man to match. I've never met him myself. He came to us as an inheritance from Ooglaah when we took it over—he'd been their peace officer for fifteen years and we sent him a commission right away. He's been a constable for twenty years and he's pretty set in his ways, I guess."

Moffat had known very well what he was being told. The Frontier Patrol always sent a man to the God-forgotten ends of nowhere under instruction for his first two years of service. The harder the assignment the greater the compliment to the recruit. That he had drawn "Old Keno" Martin was compli-



## a novelet by L. RON HUBBARD

ment beyond the highest adulation.

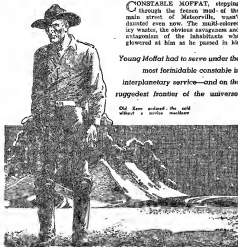
"Good lord!" his ranting male Druid had told him. "Old Kano is more of a legend than a man. You know what's happened to the only three recruits sent

to him for training? He wore them out and did them in. Every one of them came back and turned in his resignation. George, I wish you luck. By golly you'll need it!"

CONSTABLE MOFFAT, stepping through the frozen mud of the main street of Meteorville, wasn't daunted even now. The multi-colored icy wastes, the obvious savagery and antagonism of the inhabitants who glowered at him as he passed in his

*Young Moffat had to serve under the most formidable constable in interplanetary service—and on the roughest frontier of the universe!*

*Old Kano ordered the cold without a service machine*



horizon blue and gold, the saggng thermometer that registered thirty below at high noon, neither could these daunt him.

Resigned, did they? Well, he was George Moffat and no old broken-down untrained ex-peace-officer-made-constable was going to show him up. Old Keno was going to be retired when they found a replacement for him. George Moffat, strong and young, full of morals and training, already considered Old Keno as good as replaced.

He gloried in the obvious fact that the patrol was hated here. Ooglach, furthest outpost of Earth's commerce, held more than its share of escaped criminals. The men who watched him from windows and walks would meet his cool gaze. He became more and more conscious of what he was and where he was until the problem of Old Keno dwindled to nothing.

A man had to be hard in the patrol. The instructors at school were fond of saying that. He had to be able to endure until endurance seemed his ordinary lot in life. He had to be able to shoot faster and more accurately than any human could be expected to shoot and he had to be able to thrive under conditions which would kill an unconditioned man. George Moffat could do all these things. Question was, at his age could Old Keno?

Constable George Moffat entered the low building which boasted the battered sign: *Prosser Constabulary, Ooglach*. He entered and at first glance felt pity for the man he was to relieve.

Old Keno Martin, in a patched blue uniform shirt, sat at a rough plank desk. He was scribbling painfully with a pen which kept tripping in the rough official paper and scattering small blots. It was aching cold in the room and the ashes of the fireplace were dead.

He was a spare man of uncertain age, George observed, and he had no more idea of how to keep and wear a uniform than he probably had about grand opera. A battered gray hat sat over his eyes, two blasters were belted about his waist, both on one side, one lower than the other,

The squadroom was bare, without ornament or comfort, the only wall decoration being a milledown copy of the Constitution of the United States. Some cartridge boxes and several rifles lay upon a shelf, some report books on the desk. This, observed Moffat with a slightly curled lip, was law and order on Ooglach!

Old Keno looked up. He saw the horizon blue and gold and stood.

"I," said Moffat, "have just been ordered up from base." He handed his sheet of official papers and identification over and Old Keno took them and scanned them with disinterest.

To George it seemed that his attitude clearly said, "Here's another one of them to be broken and sent on his way. A hot kid, badly trained and conceited in the bargain." But then, thinking again, George wasn't sure that that was Old Keno's attitude. The man, he knew suddenly, was going to be very hard to predict.

Old Keno offered his hand and then a shake. "I'm Keno Martin. I'll have the boy stir up the fire for you if you're cold. Newspapers find it chilly here in Malserville."

Old Keno returned to his reports while George Moffat, seeing no sign of the boy mentioned, glanced yearningly at the dead fireplace. Suddenly George realized what he was doing. The lot of a constable was endurance. If Old Keno, knowing he was coming, had already started the program of hating, George was ready. Grimly he refused the warmth for himself and concentrated on Old Keno.

"I understand," said Keno after a while, "that if you measure up I'm to be retired from service."

"Well—" began George.

"Wouldn't know what to do with myself," said Old Keno decidedly. "But that's no bar to your measuring up. If you can you can and that's all there is to it. I won't stand in your way."

Young George said to himself that he doubted it. The temperature must be twenty below in this room. Inside his gloves his hands felt blue and frost-

hitten. "I'll bet you won't," George told himself.

"Matter of fact," said Old Keno, "I'm kind of glad you're here. The general run of crime is always fairly heavy and this morning it got heavier. It will be good to have help on this job. I've been kind of hoping they'd send me an assistant."

"I'll bet you have," said George to himself.

"That could really take it, of course," continued Old Keno. "Ooglach is a funny place. Hot as the devil in some places, cold in others. Regular versatility. You know why this place is important?"

"Well, I—"

"This planet is a meteor deposit. About fifteen or twenty million meteors a day fall into its atmosphere but that isn't a patch on what it used to get before the atmosphere formed as it is. Its face is studded with the things and there are holes all over the place.

"We ship several hundred billion dollars worth of industrial diamonds from here every year. Naturally we have to mine the bulk of them out of old meteors and that keeps a miser population around—which is always a tough one. Some of these stones are gem stones. They're a United States monopoly and it's our job to see that they don't get lifted. We freeze on all illegal export—especially when it begins with murder."

**M**OFFAT perked up. He forgot all about the cold room. This was what he had been training for. He was very conscious of his superiority in such cases. The latest methods of crime detection had been built into him as a second nature. His young body had been trained to accomplish the most strenuous manpunts. Mentally he was well balanced, physically he was at his peak. He knew it and he was anxious to prove it.

"You've got some idea of who is doing this?" said Moffat.

"Well, shouldn't be too hard. Of course there's plenty of tough genta on Ooglach who wouldn't stop at anything—but the point is they're cowed. My

angle is—the people who did this must be new. They murdered a mine guard up at Grater seven hundred forty-three and emptied the safe of a month's haul. That would be about thirty-five million dollars in gems.

"Any man who had been around here any time would have known better. That means the genta who did it probably came in their own spaceship. It's probably parked beyond the radar detection sphere—somewhere to the south. No, it wasn't local talent."

Moffat almost smiled. Old Keno's faith in himself seemed monstrous to him. He looked with interest at the old constable and realized with a start that all his own studies in criminology and physiognomy had not fitted him to make an accurate estimate of Keno Martin's true character. The man was clever.

"So, if it's all the same to you," said Keno, "we'll just put together a kit and take out of here for the mine. I just got this report half an hour ago and I stopped here long enough to write this dispatch for my boy to take to that spaceship you came in. I want this data relayed to other planets, though of course we'll probably get those people a long time before they get away. You all ready to go?"

For a moment Moffat was dismayed. He had considered himself fit and ready and yet he knew that his long trip on the tramp had worried him enormously. You don't sleep and eat well on a tramp and how welcome would be a few hours of rest! But he banished all thought of it. Keno would know he was tired. This was just another way of wearing him down.

"I'm ready," he said. "Just tell your boy to bring my case from the ship. I feel fine."

"Good," said Old Keno. He opened the back door and yelled to some remarkable glibberish at the shed. Then he took down from a shelf several boxes of cartridges, looked to the heads in his guns and handed a rifle to Moffat.

Old Keno waited patiently at the door until a slab-faced native brought a high-speed tractor around front and then,

after placing the cartridges in the cab, Old Keno mounted up.

"Wait a minute," said Moffat. "I don't see any food. How long are we going to be gone?"

The old constable looked embarrassed. "I'm sorry about that. My mind was just so busy with other things. Bring out a case of rations from the kitchen."

Moffat smiled to himself. This campaign was so obvious. He brought the rations and threw them into the back of the cab and then, eyes on the old constable, mounted up in his turn.

Suddenly he was assailed with a doubt. Maybe it was just vanity that had made Old Keno forget. A man wouldn't go tearing off into any trackless waste without food just to show up a new recruit. Hmm—maybe headquarters had its reasons for wanting to replace this man.

"Where's your coat?" said Moffat, eyeing the patched sleeves of Old Keno's uniform shirt.

"That's so," said the old constable, looking oddly at Moffat. "I forgot that too, I guess." He bowed at the boy, who brought up a heavy service mackinaw. But Old Keno did not put it on. He laid it across the back of the seat and addressed himself to the controls.

The revving motor sent great plumes of white snow spiraling upwards. Several curious folks came into the street to look. Moffat glanced at the old constable and felt a genuine wave of pity. "Poor Old Keno," he thought.

The yellow sky lay hard against the blinding plain. In the far distance a range of hundred thousand-foot peaks reached forever skyward, white and orange in their perpetual covering of frost. The tractor sped across the wastes at two hundred miles per hour, skimming the hammocks, its hydraulic seats riding easy while the treads bucked, spun and reared. A high fog of snow particles was left behind them and the cold which had been intense at the beginning began to turn Moffat's blood to ice crystals in his veins.

At last he surrendered. "Isn't there a heater in this thing?" he said.

## CHAPTER II

### Rugged Going

OLD KENO flushed. "I'm sorry. I've got so much on my mind I didn't even think of it." And he reached down to throw a button on the panel, which brought an immediate trickle of faintly warm air into the cab, raising the interior temperature from a minus fifty to a mere minus twenty.

Moffat tried not to show how eagerly he received this success from his distress. He was beginning to feel a little frightened of Old Keno. There he sat in his shirt sleeves, oblivious of weather. Beside him was Moffat, bundled to the eyes in all that the service could offer a man in the way of warmth—and which was not enough.

By golly, thought Moffat, a man could pretty well perish riding in one of these things if he wasn't careful. He glanced sideways at Keno. The old constable did not find anything unusual about his uncoated state.

"He's sensible," Moffat decided. "He's unable to feel anything." And then again he thought, "He's trying to run me out. I'll stick it if it's the last thing I ever do on Ooglach." And he knew with a slight shudder that this very well might be the last thing he did on Ooglach or anywhere else!

Half an hour later they pulled up beside the shaft of Crater 743, where the mine buildings clustered under a ten-foot ceiling of snow and ice. Their presence had been seen from afar and a small knot of men awaited them. Their greeting was respectful, bordering on awe.

"I've been watching for you, constable," said the foreman. "I'm very sorry to have to trouble you but—"

"I suppose you trampled up all the clues," said Keno gruffly.

The crowd parted to let him through. They had known better than to touch the murdered man or the wife or to wait



on tracks and Keno and Moffat were able to inspect the scene as it had been found at dawn by the cook.

Keno looked at the dead man and muttered to himself, "Forty-five Manner at the range of two feet. Silencer employed. Asleep when he was hit. Alarm signal started out by the intruder. Safe opened with an alpha torch."

He knelt before the broken door and Moffat was amazed to hear him muttering the code of arches and swears which would identify future fingerprints.

Moffat, puzzled, got down beside the old constable and at length, by switching the light just right, was able to make out the fact that at least there was a fingerprint there. But even with all his training he knew he would need powder and a magnifier to read that mark.

He looked wonderingly at Keno. Either the old constable was pulling his leg or he actually could read that print. It could be a bluff. After all what did a lone fingerprint matter in this case.

Moffat was additionally puzzled to find that the crew at the mine had been so meticulous as to avoid obliterating the tracks of the retreating felon. He was impressed against his wish by this. It meant these people really walked lightly where Old Keno was concerned. He was wondering if Keno had remembered to hang a plaster cast outst when he heard Keno grumbling.

"Leader's about five feet tall, walks with a bad limp, been in the Russian Army, very quick, probably shoots left-handed. The other two men are ex-convicts, both with dark hair, heavy features—one about a hundred and ninety-five pounds, the other two hundred and thirty. They rely entirely on the leader for orders. They'll fight if told. Come along, Constable Moffat. We'll see what can be done to intercept these people."

Moffat could have deduced a number of these things but not all of them. He was bemused by it. This old man was not bluffing! And that fact made Keno seem larger than before. Moffat began to divide in his own estimation.

Without a word to the waiting men

Old Keno climbed into the cab, slammed the door, waited briefly for Moffat to get settled and went off at full speed along the clear track of a departing skimmer.

Young Constable Moffat was not prepared for the accuracy of this tracking. He was beginning to understand why the other young recruits had quit here and resigned from service. Old Keno was not only good, he was dismaying. A man's eye wouldn't long withstand the puzzling of such exhibitions of endurance and machinist sense that Old Keno had displayed to him today.

Now the old man was following the thin line left by the skimmer—and he was following it at two hundred and fifty miles per hour.

As a skimmer is driven by a tractor propeller and rises on stub wings to travel it leaves only an occasional scratch in the snow. Yet Keno Martin was following this scratch. He was evidently seeing it some hundreds of yards ahead and turning accurately whenever it turned.

They raced across the trackless expanse, going south. They were silent for the most part. The dumbbell suns gradually sank until the shadows of the ice hummocks were long and blue across the wastes of crystal white.

MOFFAT was tired. The trip on the space-tramp had been a hard one, and the long hours of traveling over these blinding glaring ice fields were just too much. It would have been too cold for the human endurance of any man who had not had months of conditioning to these temperatures. Moffat had had that conditioning. But each agonizing breath of frozen air came closer to breaking him.

Then he realized that Old Keno, wringing the tractor, showed no signs of fatigue. Instantly Moffat's estimation of his own capabilities dropped. He began to regard Keno with a sort of awe.

"Don't you want me to take it for awhile?" he said at last out of a guilty conscience.

"Sorry; this will get tough as soon as

these suits set and we'll have to rely on our spots. I'll just hold on if it's all the same to you."

After a while young Moffat began to fidget. Then he suddenly realized what was the matter. "Say, aren't you hungry?" he said.

Old Keno looked at him blankly. Then he said, "Oh yes, yes of course. Get yourself something to eat."

Moffat started to turn and in that moment realized all the sensations that a man must feel who is caught in a strait jacket. He could not swivel more than an inch in either direction. His heavy uniform coat was frozen solid upon him.

Immediately he cursed the supply station eighteen light years away. The trickle of heat had melted a sliver of snow from under the windshield. While it was still daylight it had dampened his coat. As the sun set the temperature had dropped to about fifty below zero.

"Turn up the heat," he said plaintively. Old Keno blinked at him.

"That's all the heat there is," he apologized.

"Well, hit me with your fist or something," said Moffat. Old Keno blinked again. "It's my coat," said Moffat.

Keno granted and brought a back-hand slap against Moffat's chest which cracked the ice sheathing. With the disintegration began the young constable could move about. He procured a can of rations.

These had been packed by some far off organization which never had expected for a minute that anyone was going to eat any of them. Theoretically when one took off the lid heat was instantaneously generated through all the food. Moffat broke the cover and for the next ten seconds—but no more—the man was warm. Before he could get the first mouthful between his teeth the savage cold had frozen it through.

He started to complain and then he looked at the stolid Keno. Frozen rations were nothing to the old man—he was munching mechanically on the food. "Well," thought Moffat, "if he can take it I can." And he reached into an inner

pocket with his clumsy glove and brought out a chocolate bar, which flew into splinters each time he took a bite from it.

"You'd better let me drive," said Moffat. "You'll need some of your strength later on. We don't want to get tired out."

He intended this as a veingeful reference to Old Keno's age. But the senior constable paid no attention whatever.

"I said you'd better let me drive for awhile," said young Moffat.

"You sure you can handle this thing?" said Old Keno.

"We were taught all types of vehicles in school," said Moffat a little savagely.

"Well," said Old Keno doubtfully, "I suppose we've got more time than we really need. And we've been making pretty good speed. You might as well start learning now as ever." He set the automatic control on the tractor and when it reached a level stretch, during which the control could operate, they swiftly switched.

Moffat may have been bitterly cold outside but he was burning within. So the old man thought they'd lose speed if he drove, did he? Well, since when did youth take any lessons from age on that subject.

The dark was very thick and the floodlights were piercingly bright on the track ahead. The multicolored cliffs and valley of ice flared past them. Moffat found that it was extremely difficult accurately to trace the track. More than once Old Keno had to tap him sharply to keep him from straying.

Each time Old Keno tapped young Moffat swayed anew. There sat the old fool in his patched blue shirt, not caring any more about this cold than he did about rations. Obviously the old man was out to show him up, to make a fool out of him, to break his spirit. Obviously Keno expected to send him back to headquarters with his resignation written and ready to be turned in. Well, that would never happen.

The tractor roared and whined. Young Moffat let it out to two hundred and sixty miles an hour. At this speed

the ice hummocks were a blur and even more often now Old Keno had to tap him to keep him on the track.

"Pretty soon," said Old Keno, "we'll start down. The snow level at this time of the year stops at about twenty-three thousand feet. You'll find Ooglach's got a lot in the way of drops and rises. There isn't any sea level properly speaking.

"We've got three seas but from the lowest to the highest there's an eighteen-thousand-foot difference in elevation. I'd hate to think of what would happen if they ever got connected.

"It's two hundred and ninety thousand feet from the lowest point on this planet to the highest. Nature scraped her up some when she was built. I guess she wasn't rightly intended for men. This plateau we're on is the most comfortable spot you'll discover."

Moffat listened with some disbelief. The old man was just trying to scare him away.

"The low valleys are all somewhere," Keno continued, "and the one where I think our friends are hanging out will be running about a hundred and fifty degrees now that the sun has set."

Young Moffat glanced sideways at him. "Warm, huh?"

"Well, it isn't as hot once you get used to it," said Old Keno. "By the way you'll want to start looking sharp now. We'll have to turn off these lights. If we show them as we come over the top edge into the valley they'll have plenty of time to get away in their space-cars. D'ye mind?" he said.

## CHAPTER III

### Wrecked

YOUNG MOFFAT thought savagely that if Old Keno could drive in the dark, as he had immediately after sundown, he certainly could. He reached down and threw the light switch.

Instantly, as a reaction, the whole

world was black to him. He lost his sense of direction utterly. He was light-blinded and yet hurtling forward over uneven terrain at tremendous speed. He did not know whether he was turning to right or left and felt certain that he was about to shoot on a tangent from his course. In a panic young Moffat grabbed at the light panel but he was too late.

He felt the tractor start to turn. He felt Old Keno's savage pull at the levers which might avert the disaster. Then there was a terrifying crash and a roar, a splintering of glass, the scream of a dismembered motor and the dying whine of tracks running down to a slow clatter.

Young Moffat picked himself up off an ice hummock two hundred feet from the scene of the wreck. He was dazed and bleeding. One of his gloves was missing and one of his boots was ripped all the way down the side, exposing his flesh to the killing winds of the night. For a moment he could not tell ground from stars. A few planets of his own invention were spinning giddily in space.

After a bit he located the direction of the wreck by the sound of dripping fuel. He crawled back to it fearfully. He thought perhaps Old Keno lay dead within it. Moffat saw his own track in the luminous snow and feared that he had plowed straight through a feathery snowbank, which alone had saved him.

Two feet above or below the course he had taken would have brought him into disastrous collision with enormous lumps of ice.

He fumbled over the area and at last located the dark crushed blob of the wreck. All his resentment for Keno was gone now. He knew that this was his own fault. He felt that if the old man were dead he could never forgive himself. He should have known he would not be able to drive at that speed with the lights out.

"Where are you?" he shouted into the cab, flourishing through the torn upholstery.

With a sob he slid in through the

broken windshield and felt along the up-ended floor for Old Keno's body. But it was not there.

Young Moffat scuttled crabwise out of the fuming wreckage and began to look through the debris for a pocket torch.

"Well, I'm mighty glad to find that you're all right, son."

Moffat leaped upright as though he'd been shot.

"I walked on down the line," said Old Keno. "We're within about two hundred yards of the edge there and we would have been starting down soon anyway. So we ain't lost much time."

Moffat threw the torch he had found to the ground before him. If Old Keno had only been reproving or solicitous—if he had shown something, anything, but the calm cool detachment of a man who, immediately after a wreck, would walk on a little further just to see how things were—

"I might have been killed," said young Moffat.

"Oh no," said Old Keno. "On my way up to the rim I looked at you there in the snow and saw that you were all right."

The inferred superiority of this was almost more than Moffat could stand. He was rising to a point of fury.

"Well, you'd better not stand there," said Keno, the wind tugging at his thin shirt. "You're liable to get cold. Come along."

Moffat fumbled through the drift and found his glove. Then he turned to trudge after Keno. As he coasted he found that something terrible and devastating had happened to his ego.

He had always considered himself so competent. And he had always felt that older men were used up and worn out. Now he found that a man who must be well over sixty easily had the edge on him both in pace and in endurance. The cool rationality of the fellow had gnawed at young Moffat's ego until its borders were frayed.

Stark now in his own estimation to the level of a schoolboy who is subject to tantrums, young Moffat followed in

Keno's tracks and presently came up with the old man.

IF he had expected an end to travel because they were to go downhill into a valley Moffat was mistaken. One of Ooglach's moons, yellow and gibbous, had begun to rise. By its light the enormous crater before them, thirty thousand feet deep, lay like the entrance to the infernal regions.

Its black sides were rough and jagged and precipitous. At twenty-three thousand feet one could see, by looking across several miles to the other side, where the snow level ended. Below that clung a band of trees, ghostly now in the brilliant moonlight.

Young Moffat stared at the precipice before him. There was a track down, it which angled off at a steep grade, cut probably by some raining survey expedition. But Keno was not considering such a path.

"We've lost quite a lot of time," said Old Keno. "We'll have to make up for it one way or the other. Let's pitch off here and scramble on down the sidewall. It's only about thirty thousand feet and the jumps are pretty easy."

"I've been here before. I didn't take this side but I don't expect we'll run into a lot of trouble. Now—you keep close to me and don't go losing your hold on anything and falling because we don't want to mess this up again tonight."

Young Moffat took the implied criticism haggardly. Old Keno slid forward over the ice and started to drop down from crevice to crevice with a swift agility which would have done credit to an orangutan.

Young Moffat started out eagerly enough but in a very few minutes he discovered how bruised and shaken he had been by the wreck. And Old Keno, who must have been just as bruised, was stretching out a leg on him which was in itself a blunt criticism.

Hartened and scrambling young Moffat tried his best to keep up. He slid from one block of ice to the next, scraped his skins on pinacles, cut his hands on

ledges and, as the drop increased, time after time hung perilously to a crumbling chunk of basalt over eternity. He needed all his strength to get across each gap. And his foot hurt where his heel was torn.

Old Keno, far far below and evidently having no trouble, constantly widened the gap. Young Moffat's lungs were aching. If he had been too cold before he was too hot now. His uniform was shortly in ribbons and by the time he had gone down three thousand feet he gladly abandoned the jacket forever. He used only one sleeve of it to bind up a skin which really could have used a few stitches put in by a competent doctor.

He was getting weaker as the ravine and leaps took more and more heavy toll of him. He began to look down and ahead through a reddish haze which each time told him that the gap was getting wider and that Old Keno was having no trouble.

As near later he came up, an aching half-sobbing wreck. He hit against a soft form. He could not even see the old man. He slumped down on a boulder.

"Well, I'm glad you caught up to me," said Old Keno. "Now let's get moving. I took a look down into the valley and I got the spatecan spotted down there. They got a little fire lighted. Don't drop so far behind again."

Young Moffat cleared his gaze and looked at Old Keno. "That man," thought Moffat, "is going to kill me yet."

After all this terribly arduous mountaineering through the dark, over crevasses and down planities and chimeys, swinging by razor-sharp outcrops to crumbling ledges, Old Keno Martin didn't even have the grace or politeness to be short of breath. In the moonlight he was still his neat somewhat faded self.

Beaten through and through, his conception of himself so thoroughly shot that only a miracle performed by himself could ever bring it back to life, young Moffat did his best to follow.

Thirty thousand feet is a long way down! And the difficulties of the descent made it also a long way around. Time

after time Old Keno waited for him. Never a word of encouragement, never a word of comment on the difficulties of the descent—Old Keno was neither short of breath nor apparently tired of him.

Hours later, when they at last came to the bottom of that scorching hell, Moffat supposed that he had at least passed through the worst of it. His breath was sobbing in and out of him. His body was a rack of pain. The only thing that had kept him going this long was the knowledge that the worst was almost over. Certainly he had no more to experience. But he was wrong!

As Old Keno had said it was a hundred and fifty degrees here in this crater. The sand was baking hot. He reached his hand up to his eyes and swept away some of the perspiration which was blinding him. His lips were thickened by dehydration.

The night was so hot and so dry that it pulled the moisture out of a man with a physical force, cracking his skin and drying his eyes until it was torture to keep them open longer than a minute at a time.

"Don't walk forward," said Keno, "there's a two-thousand-foot drop about twenty feet in front of us."

Moffat, stumbling forward, hadn't even realized he had caught up with Keno again. He was startled by the voice and he hunched up a few steps. He concentrated his eyes on the spot Keno indicated and at last he saw the dark chasm. Glimmerly he approached the edge.

He felt that he was looking into the very bowels of the planet although he could see nothing but blackness. He sensed the awesome depth of it. He stepped back cautiously, afraid that if he made a sudden movement he might fall headlong over the edge. The heat waves coming up from that black hole made him dizzy and his legs felt as though they might slip out from under him at any second. He turned back to Keno.

"We're within a quarter mile of them," said Old Keno. "I doubt if they get wind of us. It's a heck of a long

ways back there to the ridge and they probably figured we was a meteorite like I thought they would. If they saw our crash at all, that is. That crew can't have been here more than ten or twenty minutes but they got a fire goin' already. Small is it?"

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## CHAPTER IV

### *Live Targets*

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**M**OFFAT sniffed at the wind in the vein. He could not discover the least odor of woodsmoke. Just breathing this air was enough to sear the lungs and burn scars on the throat without trying to smell anything in the bargain. He looked wonderingly at the old constable.

"They'll be boiling some fresh meat they got back at the mine," said Old Keno. "It wouldn't keep long down here and they probably haven't any gallery in their spacoon. I figured I'd smell woodsmoke when I got here the second I noticed that a bunch of barstee had been ripped from the drying racks outside the guard's shack at the mine."

Trained ardently, given the highest grades in detection, the young constable felt immensely annoyed again. He was failing every test. He had missed an important clue. Hurriedly he changed the subject. "How'd they cross this gap?" he asked.

"Oh, they're on this side of it all right," said Old Keno. "I saw their last tracks back there about a quarter of a mile. They turned off to the left and we're like to find them about a quarter of a mile up the way. You'd better shed those boots. They'll make an awful racket if we hit hard rock."

Again he felt like a small boy being told to do the most simple and obvious things. He shed the boots and was instantly aware of new difficulty. His feet were in ribbons from the terrible climb down and were chilled by the shift in temperature as well. And now they

had to contact sand which could have roasted eggs.

With the first steps he felt his feet beginning to blister and tears shot into his eyes from the pain. But Old Keno had also shed his boots and was striding easily forward, oblivious of this new agony. The old man, thought Moffat, would have walked through walls of fire with only an impatient backward glance to see if Moffat was coming.

"Are we close?" said Moffat at last and the words came out like rough pebbles, so achingly dry had his mouth become. Each gasp of air was like swallowing the plume on a blowtorch.

"No need to talk low," said Old Keno. "The wind's from them to us." They're camped by a running stream anyway and they can't hear above it. It'd be thirty degrees cooler where they are. This valley is like that. Hear it?"

Moffat couldn't but Old Keno was talking again, pointing to a tiny pinpoint, which was their fire, and the gleam, which was the spacoon, beside it.

"Cover all three from this side with your rifle. Don't shoot unless you have to. I'll slide and approach from the water side and challenge them. Don't plug me by mistake now!"

The disrespect in this made Constable Moffat wince. But he took station as requested. Lying across a frying hot rock with the night air broiling him, he laid the starting stock of the rifle against his cheek. He trained as ordered on the party about the fire.

He almost didn't care about what happened to himself any more. He knew that the rock was burning him. He knew that the rifle barrel was raising a welt on his cheek. He felt some slight relief that his now-bleeding feet were off the ground. But he just didn't seem to care. There was the job to be done and that was all that mattered.

His body had been so beaten that his mind couldn't or wouldn't look at anything but the immediate present. All the concentration and will of his being was centered on this task. He would accomplish his purpose if it were the last

purpose he would ever serve.

The three men in front of the fire were laughing, oblivious of any pursuit, certain in their security at least for the next few hours. Before dawn they would be out of the atmosphere and beyond reach. They had a big kettle in which they were boiling bayleaf. From time to time one of them would pass another some particularly choice bit.

For an interminable while, it seemed to him (although in reality it was less than three minutes) Moffat waited. At length he heard Old Keno's voice.

"Keep yer hands clear, genta, I'm comin' in!" The three about the fire huddled, hunched as statues, clearly fanned by the leaping flames. Thirty paces beyond them, into the circle of radiance, stepped Old Keno. His hands were swinging free, no weapon trained.

"I'll have to trouble you boys to come back and take your medicine," said Old Keno. "It ain't so much the diamonds, it's that guard. Human bein's come high up here."

"Frontier Police!" gasped the leader, starting to his feet. And then he realized what this meant—sure hanging!

"I wouldn't do anything foolish!" said Old Keno flatly.

The man wore a weapon, low and strapped down. "We're not bein' took. I reckon if you're a condemned enough fool to come after us all by yourself—"

The leader's hand, silhouetted in the sunlight, flashed too fast to be followed.

There was a blind of roars, four shots! And then it was done.

Moffat had seen something he was never likely to forget. All three men had been on their feet. Old Keno's hands had been entirely free from his guns. The leader had drawn first and the other two had started to fire.

But Old Keno's left hand had stabbed across his body and his right had gone straight down and his three shots were like one blow. The leader's bullet went whining off on some homeless errand amongst the rocks. Three men were dying there, three men had been shot before the leader had squeezed trigger.

And Constable Moffat's frozen, cut

and blistered finger had tried to close to back up the play and Constable Moffat had not been able to fire! He stayed where he was, semi-paralyzed with the shock of what he had seen—three men shot in something like an eighth of a second.

The leader went down. Another man dropped into the fire. The third stood where he was, propped against a rock, eyes wide open and the sunlight shining in them—stone dead.

Moffat looked at his hand. He had not even been able to squeeze trigger. He, champion shot of the school, had not even been able to fire at his first live target when his companion was in danger!

ON the verge of tears Moffat came up from cover and walked toward the dying blaze. Old Keno was heading to retrieve their loot.

Moffat stepped into the ring of light. And then, of a sudden, a strange sensation came to him. It was like a yell inside his head. It was like an automatic switch being thrown. He knew he was in danger!

With the speed of a stabbed cat young Moffat dropped to a knee, spinning on it toward the spaceman, drawing a rifle head as he turned. He had not heard anything. But there stood a fat Asiatic in the passageway port, rifle leveled at Old Keno, about to shoot. He never got a chance.

Young Moffat fired from the hip and the bullet caught the fat one in the chest. His weapon exploded into the night. And then without looking at that target Moffat saw the second.

Under the shadow of the spaceman a man had come up, his arms full of weapons. This was falling now, halfway to the ground, and a gun was in his grip, aimed at Old Keno. The gun blazed. Moffat fired and the fifth man went down.

But he was not alone. Old Keno, the infallible never-missing always-before-hand Senior Constable of Ogilock, was flat on his face in the sand, motionless, victim of his own overconfidence.

Coming quickly to the spacious port young Moffat scanned the interior with his flash. There were five tumbled and evil smelling bunks here. He glanced back to the fire, counting noses to make sure. Then he scooted wide, looking for strange tracks, and in a moment knew that they had the entire outfit. Not until then did he come back to Old Keno and there he knelt, turning the ancient patrolman over.

To see the wound and its extent it was necessary to remove Old Keno's shirt, for the bullet had apparently lightly crossed his back.

It was cooler here by the side of the stream which, a few feet further planned two thousand feet into a chasm and which chilled the air in this cup. Young Moffat felt himself relaxing, bent up as he was, Old Keno missing such an obvious thing!

He had off the patched blue shirt and then rolled Keno to his face, fumbling for the wound. It was light, it was on the surface—

Suddenly Moffat stared. He came halfway to his feet and still stared. He took out his pocket flash and took eagerly beside the fallen man. His brown knit and then began to ease. Sudden laughter sprang from his lips, rose up the scale toward hysteria and turned aside into an honest bellow. What he had endured for this! What he had endured!

Young Constable Moffat sat down in the sand and held his sides. He laughed until his shoulders shook, until his breathing pounded, until his sides caved from labored wheezing. He laughed until the very sand around him danced. And then he looked—growing calmer and settling to a mere chuckle—back at the fallen man.

Moffat pumped up and went into the ship. Presently he came back with a kit and began to patch. And in a very short while Old Keno was sitting groggily up, trying to piece together what had happened.

The young man watched him. Through Moffat's mind was flashing all he had gone through—the cold, the heat,

the sharp rocks, the wreck. He thought of the light when Old Keno had drawn and killed and he thought of the faculty Old Keno did not have. He had lasted and come out here.

"How much do you know of yourself?" said Moffat.

Old Keno stared in amusement and then, eyes shifting to the blue shirt and becoming conscious of his nakedness, slowly averted his gaze.

"Everything you know, I guess," he mumbled. "I didn't know it at first. I came up here for some reason I can't recall and the transport crashed near Motecaville. I thought I just had amnesia and I went to work in the bare as a guard.

"Then they made me marshal and finally the Frontier Patrol commissioned me a senior constable. Twenty years and I didn't know. Then I went down to Center City, where they built the big new prison. And they've got a gadget there to keep weapons from going in. I couldn't pass it. That's how I found out."

"Did anybody know?"

"I fell and when I came around I was okay. No, I don't think so. Why?"

"I think you were out longer than you thought," said Moffat. "By the way did you ever read this sign on your back?"

"I tried with mirrors but I couldn't."

"Well, listen," Moffat studied it again before reading it aloud.

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There was silence for a moment. Old Keno looked scared and reached for his shirt. "You'll turn me in." He heaved a sigh. "I'm done."

Young Moffat grinned. "Nope. Because that isn't the only sign there. You



were not a lot longer than you thought at Center City. They must have had time to send despatches to the Frontier Patrol. Because there's another sign."

"Another?"

"Yep," said young Moffat with a jubilant upsurge. "It reads very short and very sweet."

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Commanding Station C

"I'm a trainer," said Old Keno.

"You showed up three," said Moffat. "Three that couldn't take it the hard way. And you almost killed me, Keno Martin. Froze me and broiled me and drained me of the last ounce. By golly I never knew what I could stand until

I came to Ooglach. And now—well, if they want to train a man the hard way it's all right with me."

"And I—" fumbled Old Keno.

"Martin, you're better than men in a lot of ways—heart, cold and energy. But of course your sixth sense doesn't exist. You'll have to watch for that. But you're still Senior Constable of Ooglach and I guess you'll last forever if you don't short-circuit from a slug."

"I replaced the fuse that bullet blew. You'd better keep some in your pockets. So they won't be retiring you, Keno, until you fall apart and according to your back, that won't be until forever arrives. Okay, Senior Constable?"

Old Keno became suddenly radiant. He looked at the boy before him and his smile grew proud. He put out his hand for a shake. "Okay, Senior Constable Moffat," he said.

They shook.



## The Author of "Destination Moon"

**ROBERT A. HEINLEIN**, whose novel *Rocket Ship Coffin* was the basis for *Destination Moon*, is one of the most outstanding science fiction writers ever made, and who is listed as co-author of the script, as a man of many well-confirmed hobbies. The 43-year-old former U.S. Navy officer and writer of science fiction stories, whose novel, *Jerry Is a Man* (DWE), October, 1942 is one of the finer pieces of imaginative world science and comparison magazine has ever run, has a wide variety of personal interests.

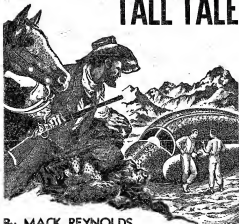
His avowed likes are "traveling the United States, visiting this planet, visiting the rest of this system (light hitch in the arrangements on that one—the service is poor); figure skating, reading, talking and a constant amount of listening, dogs and cats and, in a lesser extent, anything alive including snakes, worms, lizards, spiders and crickets, the company of women and, again as a lesser extent, the company of men."

Such a breadth and variety of interests have had undoubtedly much to do with Mr. Heinlein's success as a creator of imaginative stories, books and now finally with a movie as *Destination Moon*, which represents, through its impact and ability, a new phase in a brilliant career. He became a writer as the result of a prison story contest—put his story on the general market instead of into the contest and promptly sold it, wondering as he studied the check, "How long has this been going on?"

One of the few old regulars to make a consistent name for himself in the so-called "slick" magazines, Mr. Heinlein has achieved some measure of fame under the pseudonyms of Anson MacDonald (*By His Bootstraps*, *Fables*, *Dark Continent*), Lyle Monroe (*Let There Be Light*, *Lost Legend*), Caleb Southard (*Eleventh*) and John Riverside (*The Unpleasant Profession of Jonathan Hoag*).

We hope that the author of our recent review of the Willy Ley-Chesley Bonestell *Conquest of Space* has a hand in a far more of motion than *Destination Moon*, which is virtually a "must" for all science fiction devotees.

# TALL TALE



By **MACK REYNOLDS**

*Two jet-plane pilots beat the speed of light  
back to the days of the fabulous Jim Bridger!*

It might have been just another sight of one of the new, radical appearing, almost wingless, rocket ships, it might have been, but it wasn't. The dozen technicians gathered about the shaft in the clear sky of the California desert tried to cover their concern with routine checking and activity; but it was obvious that something momentous was afoot. The pilot and his assistant flaked away last minute cigarette and waved a somewhat good-by to the others. They were never to be seen again—not in this age.

But was making an attempt to reach the speed of light.

**JIM BRIDGER**, mountain man, was going to be late for the rendezvous at Teas, but he knew better than to hurry at the price of caution. He'd kept his hair thus far through Sioux country and Blackfoot, through Ute territory

and Cheyenne. He had no intention of losing it now.

Not that those Sangre de Cristo Mountains weren't comparatively safe. There were Arapahoes to the north, and even the devil Apaches to the south

and west, but the principal inhabitants of the area were the Puelche who were relatively peaceful.

He rode cautiously to the crest of a foothill and looked down over the small valley before him for long moments, his mountain trained eye taking in any sign that might possibly mean the presence of man. It caught nothing. He rode forward, his caballado of six heavily laden burros plodding faithfully after.

He was about a day's ride from San Fernandez de Tama—Tama to the mountain men—rendevous of the trappers working the Rockies for these past few years. Instead of trudging all the way back to St. Louis with their beaver, they had made arrangements with the Rocky Mountain Fur Company to bring their needs closer to the trapping grounds. Once a year they met at some predetermined point, sold their furs, bought their gunpowder, new traps, and possibles, and had a glorious week or two of drinking aqueducts, gambling, story swapping, and dancing with the local sleezy-eyed scortinas.

THERE was a dull, long swoosh of a pear, and the sun darkened momentarily as a huge, long object shot through the air. Later he was to describe it to himself as looking like a catfish with abnormally large side fins.

It roared half way down the valley and landed in a crush of dust, gravel, and torn sod and sage. He could smell smoke in the formerly clear, cold mountain air.

Jim Bridger held his flintlock rifle at the ready—cold-eyed, on the defensive. He'd seen a multitude of new and strange sights in his years in the unexplored Rocky Mountains. Never anything like this. For long moments there was no sign of movement. The thing was the size of a small adobe house. He refused to let himself remember the fact that it'd just been flying through the air, and occupied himself quieting his horse and burros.

Part of one wall slid back to reveal an opening and a man stepped out. Jim Bridger swallowed his tobacco,

The man was followed by another and together they walked around the object which had contained them, as though inspecting it. They were obviously upset.

The mountain man kept his rifle at the ready across his lap and rode forward slowly, trailing his unwilling burros behind. The strangers didn't notice him until he was within a hundred feet.

They were young, clean shaven, and dressed in store clothes such as Jim had never seen, not even in far St. Louis, but his jumping off place for the far West.

"Wagh! Thought I was a gone beaver back thar a few minutes ago," Jim said easily. "Whar floats yore sticks, strangers?"

They looked him over, taking in every detail of his clothing and equipment. Then their eyes went back to his burros.

"A character," one of them said. "A hillbilly. That's all we need."

"Quiet, Larry," the other man muttered. "We're going to need help before we're through."

Larry snorted. "What does he look like to you, Steve, a master mechanic? Get a load of those clothes and that face maff he's wearing."

Steve ignored him and turned to Jim. "Listen, old-timer, we're lost. Our ship, here, gave us some trouble and we had to set it down. Whare are we?"

Ship? Wagh!

Jim wished he hadn't swallowed that tobacco; it must be affecting his head. Did they say ship?

He got down from his horse and walked over to touch the thing carefully. Sure enough, it was metal. Maybe not steel, but metal. Tons of it.

He looked at the strangers. "You ain't lost. It's about one day's ride to Tama. That's whar I'm a headin' for rendevoo."

"Sounds like a character out of Stewart Edward White," Larry sniffed.

"How far would that be in miles?" Steve pursued. "Do they have an airport there?"

Jim considered. "I'd say about twenty-thirty miles as the crow flies. They got

everything in Toss, but I never heard of any airport."

"He must be talking about Toss, New Mexico," Larry said in disgust. "It's an artist colony and tourist town. We're further east than we thought. I figured we were somewhere near Phoenix."

JIM walked slowly around the contraption they'd called a ship. One end was rounded, with heavy glass windows; on the other end were heavy metal tubes. What he'd thought of as fins before were more like short stubby wings. When he got to the door, he peered in. Wagh!

The ship, as they called it, was jammed full of machinery such as he'd never seen or heard of. Two chairs, heavily upholstered, were up front near the windows. A multitude of dials, gauges and other fantastic instruments were before the chairs.

"If this thing's a ship, I'm a silver buffer, martin!" Jim told them.

Steve laughed. "I guess this must be the first rocket ship you've seen. Matter of fact, it's more than that, old-timer. We just use the rockets until we've hit over two thousand miles per hour, then we switch on the Duplet effect device—to exceed the speed of light." He ran his hand through his hair ruefully. "Thought we had it there for awhile but our solar burst cut and we had to get down in a hurry."

Jim had only got about half of that, and that half didn't make sense. But he resisted that "old-timer" stuff. Where did they get off? He wasn't much older than they. He fingered his heavy beard and grunted. Maybe a year in the mountains without shaving made him look a mile older.

He looked back at the ship. At that, possibly it'd float. But there wasn't enough water this side of the Missouri to float it. Besides, the way they talked, it was meant to go in the air instead of the water. He sure wished he hadn't swallowed that tobacco.

"Where you strangers from, if I might be so free-like?"

Larry had turned back to observing

the rocket ship ruefully. "Glendale," he said over his shoulder.

"Where might that be?"

"Glendale, California," Steve told him. "As a matter of fact, we'd better let them know what's happened as soon as possible. How far is the nearest telephone?"

"Tel-a-foam?" Maybe these men were Spanish. He couldn't understand half the words they used. Besides, California was mostly Spanish.

"I never heard of a tel-a-foam about here. Might have one in Toss."

Larry said decisively, "We could fix the solar right here and in short order, Steve."

"Yeah, but what good would it do us? We'd have the devil's own time trying to take off from this spot."

The other ran his eyes about the valley. "Not if we could turn her around to point back the way we came. A quick blast would lift her over that slope and leave her airborne. That cliff drops off beyond. If we gave her a full blast just as we lifted over the slope, we'd have it."

"Either that or we'd crack up to the point where the wreckage would be lifted over half of New Mexico and Colorado."

"I'd rather take the chance than spend weeks around here trying to get the thing to Toss. Besides, I don't see much in the way of roads." He turned to Jim Bridger. "How near is the closest good road, something paved so we could move the ship over it on a heavy trailer pulled by a tractor?"

Jim looked at him wide-eyed. "There would admire to see anybody with anything move that thrar contraption. Nearest roads I know of be in Toss. Ther be a paved of roads about Toss."

THEY considered that for a moment. "I suppose you're right, Larry," Steve said finally. "If we could get a tractor in here, we could turn the ship around and take a chance at lifting over that slope." He turned to Jim. "Where's the nearest tractor we could hire?"

"Tractor?"

"Yes, tractor, tractor. You know. They pull plows with them, agricultural tools and so forth."

"You mean a horse?"

Larry grinned. Then his eyes fell upon the burros and glinted with inspiration. He pointed at them. "They'd do, Steve. We could turn it around with those mules."

Jim Bridger snorted. The concerned fool didn't know the difference between a mule and a burro. He said, "You mean you want to turn this contraption around so as to try and git it up in the air agin, w'e you can go back to Cal'forny?"

"That's right," Steve said hopefully. "Could you give us a hand?"

"Rotten so. I shore would admire to see you git that thing up in the air."

They unloaded the burros and spent the next hour improvising tow ropes. As they worked, the two Cal'ifornians argued about the ship and what had caused the emergency landing.

"I tell you, it was the atom. If it had held out another five seconds we'd have touched the speed of light. Maybe we did touch it, for that matter. It was awfully close."

"I don't know. I'm still wondering about those figures of Jerry Johnson's. He claims that if we reached it we'd be tying with our position in time."

"Bunk. Why is it everybody's going batty on this subject of time lately. Ever since that Frenchman disappeared, I've heard plenty of nonsense."

"That's what Jerry bases his idea upon. He claims the Frenchman exceeded the speed of light."

Jim Bridger had given up trying to understand them. He wondered if all Californians were like this.

They hitched the burros to the stern tubes of the ship and found them insufficient in pulling power. They brought the horses into play and themselves. Finally the craft budged and then moved. They hauled it painfully about until it headed in the opposite direction. They pointed it carefully, under Steve's supervision, spending a full hour before he was satisfied.

Another half hour was spent working at the balky part which had caused the emergency landing. This time Jim spent squatting on his heels still staring at the sleek, metallic fish-like vessel.

Finally Steve wiped his hands on a piece of waste. "You'd better stand back a way, old-timer," he said. "When we blast off, it's not safe to be near the rocket tubes."

Jim loaded up the burros, while the Californians made their last-minute preparations, and was finished by the time they were.

Steve approached him again, this time with a piece of paper in hand. "We appreciate all you done, and want you to take this twenty dollars for your time."

Twenty dollars? Jim took the piece of paper and looked at it. It appeared somewhat similar to the paper money you saw back East, but it was a pretty poor imitation. Too small for one thing, and the man who'd printed it hadn't even bothered to get his dates right. It read *series of 1864*. Wagh! It wasn't even 1834 yet.

BUT Jim took the joke in good humor. He knew that the Californians wouldn't have insulted him by really offering him money for his help. Out here in the undeveloped West white men had to stick together if any were to survive. When you helped another it was on the premise—free.

He waved to them and rode his animals back to a vantage point on a small hill. He sat there and watched.

After a few moments, the jets at the stern began to moan and then roar. The rocket ship quivered and slowly slid forward. Quickly it gathered momentum, then, suddenly, in a rush, shot toward the slope with blurring speed. By the time it reached the slope it was traveling so fast, Jim's eyes could barely follow. It roared into space, dipped almost imperceptibly for a split second, caught on and disappeared in seconds into the blue.

"Wagh?" Jim Bridger said aloud. He wished that he hadn't swallowed that shaw of tobacco . . .

Later that same day, he pulled into Tama. It was early evening. From a distance he could hear the roaring and singing of the celebrating mountain men. And from the sound of the gongs on, it was a hang-up fandango. He hurried his horse in anticipation.

**A**N hour later he had found housing for his animals and strolled toward the plaza from whence the loudest sounds of revelry were coming. A score of the mountain men were gathered about a fire, a small keg of aquavitto, the mountain dew of Tama, its head saved in, provided the liquid tongue looser needed to bring out the wildest in the trappers. They were drinking it by the tin cup full.

Jim Bridger recognized a dozen or so of them; Sublette, young Kit Carson, Doc Smith, others. They were loudly recounting their experiences of the year; the number of pileu beaver they'd brought in, the number of war parties from which they'd escaped, the areas they'd explored, the Indians they'd killed.

He approached the freight, dipped his own tin cup into the keg and found a place for himself by the fire. One of them spotted him and roared, "It's Jim Bridger, you might as well shut up now. I swear, when Jim tells what happened to him even this hazy Dutchman, Baron Munchausen, stays quiet." He laughed uproariously.

"Why last rendezvous Jim came in with

takes about a salt lake that was so salty you hurt your head if you dived in. 'Twere so salty you couldn't sink."

Another took up the barter. "And then there was this place Jim came to where hot and cold springs and even mud springs were a bubbling away. A place where water and steam were a shootin' out of the rocks and up into the air."

They broke into drunken roar after roar of laughter. "What did you see this time, Jim? Tell us what you discovered this time."

Jim Bridger finished his drink slowly, his face expressionless.

He got to his feet and went over to the keg for another cup of the liquid dynamite.

"Tell us what you saw this time, Jim," they roared.

He looked them over speculatively. "I didn't see nothing out of the way, this trip," he said quietly.

He made his way back to the fire and took his place again. When attention had been drawn to some other speaker, he took the twenty-dollar bill from his pocket and looked at it carefully. There was a touch of wastefulness in his mountain sharpened eyes. He shrugged and threw it into the fire and turned to Doc Smith who was sitting next to him.

"You ary been to Calferny, Smith?"

The other shook his head.

"I'm thinkin' of lettin' my stick drift thataway after this rendezvo," Jim said. "They got some mighty strange things in Calferny."



One of the greatest science fiction yarns ever written—IN CAVERNS BELOW, a novel of strange subterranean adventure by Stanton A. Coblentz—featured in the big Fall issue of FANTASTIC STORY QUARTERLY, on sale at all newsstands! 25c per copy everywhere!

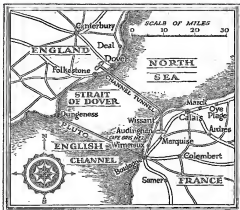


Diagram on map shows the route of the proposed traffic tube from England to France. Plotted marks the route of all pipe lines successfully installed under water during World War I.

# The Channel Tunnel

By WILLY LEY

A SCIENCE fiction story about an invention is far superior to the story of a real invention on quite a number of counts. It has a definite hero who wins out in the end. It has a clear-cut conflict with the hero trying to accom-

plish something while the villain wants to prevent it. Both have definite reasons for their actions. And there may be some love interest involved too.

But what would you say to a story in which there is no real hero to begin

Inside Facts on a Long Delayed Project!

with? Instead there is a succession of heroes who appear momentarily and they all have different plans, so far as the invention itself is concerned; some of them frankly admitting that they are going to make up part of it as they go along. And while there is a kind of villain for at least a while, he does not have any definite reasons for his actions. If he has, they are not clear enough in his own mind to state them.

Incidentally the villain and his supporters are at cross purposes. So are the supporters of the hero. There is no visible love interest in the story at any point. And it ends up with a war in which the invention is almost accomplished. But then the side which you, the reader, are on, after winning that war, sits back doing nothing and you are left with the unpleasant feeling that the other side in that war (the enemy of your heroes and your own) might have done something if things had worked out the other way.

I admit that it is a very poor plot.

The only thing in its favor is that it is true.

The invention involved is the Channel Tunnel.

### The Geographical Situation

Let's get a picture of the geographical situation first. The large island which is England and Scotland is separated from the European mainland, specifically France, by a fairly narrow and shallow channel of sea water. Geologically speaking that channel opened only yesterday. Primitive Man once could reach what is now British soil without swimming or even wading.

The maximum depth of the Channel is around 200 feet. At its narrowest point it is just about 31 miles wide and along that line the greatest depth is 160 feet. Its bottom consists superficially of the customary mud, some thin strata of soft stone resting on a heavier stratum of white chalk which is probably water-soaked.

The white chalk, in turn, rests on a solid layer of grey sandstone which formed in the Cretaceous Period. It is

reasonably dense for a sandstone and it happens to be impervious to water. As for the water above it happens to be unpleasant most of the time: it is either choppy or downright rough. There are currents and there is quite often fog which may conceal the rough seas to the eye but does nothing to stop the rocking of the vessels.

I may add that I'm speaking from experience.

About any modern engineer, looking at these facts, would wonder whether one shouldn't avoid all the unpleasantness and the weather hazards by simply reconnecting England to the mainland with a tunnel drilled at a safe depth. The interesting thing is that this idea occurred for the first time a century and a half ago.

In 1802 the French engineer Mathieu-Favier submitted to the First Consul of the Republic a memorandum dealing with the plan of a tunnel from Calais to Dover. The First Consul was named Napoleon Bonaparte and he was greatly impressed. When Charles James Fox of England visited him he excitedly pointed to Mathieu-Favier's plans and said: "This is one of the great things we could do together."

Fox, more or less living up to his name, just replied diplomatically that "an Anglo-French union could rule the world." Soon afterwards the diplomatic relations between France and England ended and Mathieu-Favier's plan died with them.

It did not really matter much because they were too far ahead of their time for practical realization. Most likely the tunnel could not have been built then and even if it had been done by some superhuman effort, the problem of ventilation would have been unsurmountable. After all, the trip would not have been a 20-minute journey in an electric streamliner, but a three to four-hour ride in a horse-drawn mail coach with smoking oil lamps.

But no matter how premature, the idea had been born and one by one adventure-minded engineers and architects began to think about it. At first they



did not completely agree with M. de Fourville's scheme, probably realizing the difficulties. An English cartoon by the name of Dunn appeared before the public with several publications, stating that the plan itself was good but that drilling a tunnel was both too difficult and too expensive.

However, the idea could be salvaged: the tunnel should not be drilled through the rock but should consist of heavy cast-iron pipes just laid across the bottom of the Channel. Because of the low depth the water pressure would be easy to handle. And twenty-odd miles of cast-iron pipe would be much cheaper than a real tunnel, especially since nobody had any experience with long tunnels. That, of course, was long before the 18-mile-long Stranraer Tunnel was blasted through the Alps—accidentally through very hard rock.

### A Bridge Is Proposed

Dunn's proposal was quietly discarded. Nobody could guess, of course, that Dunn had provided an idea which helped in the winning of the Second World War.

Two years later two Frenchmen, Polignaux and Rousselle, offered another proposal. One should build a bridge across the Channel, high enough to permit ships of all types to pass underneath. They had drawn up some preliminary plans for such a bridge, with ramps on both sides it would be 34 miles long. They had also made a cost estimate: four billion gold francs (400 million gold dollars). Nobody read just that cost estimate and Polignaux and Rousselle realized why. They revised their plans: it should be a dam across the Channel, with three large pipes spanned by high bridges for the sake of navigation. That would cost only 840 million gold francs (160 million gold dollars). Free tomorrow, now?

Monarchs, generals and governments all said "yes" and that ended that. A little later the first real hero of the story appeared, the French engineer, Thome de Gamond, who spent 15 years of his life and all of his fairly sizeable fortune

advocating a tunnel. His arguments were simple and convincing. The bridge or the dam with bridged gaps still was subject to weather. A storm was a storm. An road bridge was almost worse than an road ship. Even if a bridge were much cheaper than a weatherproof tunnel, logical reasoning would favor the tunnel. The admitted lack of experience in building very long tunnels would be overcome in the only way in which it could be overcome: by building the tunnel.

Thome de Gamond was lucky so far as the political atmosphere went. France and England were on friendly terms again. And France's ruler was Napoleon III, the nephew of the original Napoleon who could be counted upon to support anything his uncle had once supported. But Gamond's first plan was rejected by British experts, with good reasons.

Gamond at first wanted to string thirteen artificial islands across the Channel, to be built up with the material which was being excavated under the sea. These islands would also contain "ventilating chimneys" for the tunnel. Thome de Gamond was told that Channel navigation was bad enough as it was and that thirteen artificial obstacles just could not be tolerated. He did have to admit that the objection was sound, even if he did not like it himself. Fortunately it happened to be a period when engineering made its first big advances. What had seemed impossible only a year before began to look feasible the year after.

By the time of the Franco-Prussian war of 1870/71, he had plans for a tunnel which would not need ventilating chimneys. It was to run the shortest possible course, from Cape Gris Nez on the French side to Folkestone on the British. It was to be precisely one hundred feet below the bottom of the Channel. Such a depth made its total length a little short of thirty miles, about 23 miles of actual tunnel under the Channel plus some four miles on each side to allow the necessary depth by means of a very gentle incline. Meanwhile a number of railroad tunnels had been chopped

through mountains, the problems of drainage and ventilation had become better known and could be solved.

### Freeholdman Ferries Company

In 1872 de Camond founded the Channel Tunnel Company. Because this was a project involving two nations, it soon became necessary to have an English Channel Tunnel Company (to deal with the British government) as well as a French Channel Tunnel Company. Both were to share equally in the cost of construction which was estimated at around a hundred million dollars. The French were sure that they could raise their share and when the British seemed reluctant, the French company offered to raise the total amount. Whereupon the British walked out and were crushed; but whatever hard feelings may have existed temporarily didn't last long.

Once more Thoms de Camond found the political atmosphere tricky. French support was generally unanimous. Naturally such a project had military implications and to all Frenchmen England was now definitely "the enemy" in spite of past differences. This attitude had been largely caused by the fact of the founding of the German Empire which was, in view of the recent war, "the enemy" in England support for the plan was not unanimous, but it may well have looked like it for a while.

The people of England were definitely "for" Victoria, Queen of England, was enthusiastically in favor, so was the Prince Consort, so were Gladstone, the Prime Minister, and other important political heads, like Lord Lansdowne and Lord Salisbury. That the "South Eastern" (railway) and the Chatham and Dover Railway Company began to fight each other bitterly did not disturb anybody, it was just proof that the venture was thought profitable by both.

In 1878 the French Tunnel Company and the French government reached a complete agreement on all questions, an agreement which still holds. During the same year Thoms de Camond died.

In 1877 the final proposal was submitted to both governments, designed in

outline by de Camond, but worked over by great and well-reputed engineers: Harbord Brown, Joseph Lock, Sir John Hawkshaw. The tunnel was to be really a twin-tunnel, consisting of two tubes, each for one-way railway traffic. Practically all the way these tubes were to run 220 feet below sea level which placed 55 feet of protecting rock over the tunnel even in the spot where The Channel was deepest.

The two tubes were to run 55 feet apart, cross-connected frequently by galleries. Work was to start with a single tube 15 feet in diameter running some 15 feet below the later tunnel floor; this first "working tube" was to be the drainage tube later.

In 1882 actual work started. Two vertical shafts were driven into the ground, one at Shakespeare Cliff on the English side, one at Sangatte in France. From the bottom of these shafts horizontal galleries, more than a mile long, were driven out under the Channel to test the geologists' assertions about that layer of grey sandstone from the Cretaceous Period (often called "gray chalk") which was said to be in the right place and depth, impervious to water, just easy to work. The geologists had predicted correctly. Everything was as they had said. They were proved right once more in a rather odd fashion 51½ years later when somebody inspected the machinery abandoned in these galleries. The machines were found still in position, and still dry, under the bottom of the Channel.

Because in the meantime the yellow had entered the picture and had worn out over the man who wanted to carry the work through. His name, Lord Wolseley. His position: Chief of Staff. His assignment: the Channel Tunnel would threaten England's security.

How?

Here are his four points: (A) The enemy could invade England without declaring war by disembarking troops as troopers in tunnel trains; (B) the enemy could land near Folkestone, capture the British end of the tunnel and turn it into a supply artery to his beach; (C)

British could turn the tunnel over to the enemy; (D) the enemy might ask the tunnel as a peace price after a successful war.

Considering the geographical situation "the enemy" would be mainly France. The French could have felt isolated, instead they laughed loud and long. They asked General Wolsley a number of pertinent questions. As to (A): wouldn't British Intelligence know when a war was imminent? As to (B): if England was safe by being an island, why to repulse landing attempts, what prevented them from repulsing one near Folkestone? As to (C): didn't the English think they might be able to defend the tunnel mouth (the French said "the major-hole") As to (D): why did the British chief of staff live on the assumption that his country would lose?

They went further than that. The suggested that the English should build a fortress near the tunnel mouth so that it could shield the mouth into collapse, if needed. They suggested building the tunnel with a five-mile "dog" which could be flooded in case of war. They might even have commented to the British par-

liament on the French said too. Lord Wolsley remained stubborn. He forced the formation of a special committee of the Lower House, with Lord Lansdowne as chairman.

The decision came out 6 to 4 against the tunnel (the chairman voting for the tunnel) but found itself unable to agree on a reason for its decision! And that vote, against the will of the people, against the wish of the Queen, stopped work on the tunnel. The workmen were recalled from their duties, the machines abandoned.

### Tunnel Discussed in 1908

In 1906 the project came up for discussion again. Rejected. In 1914 it came up for discussion. Rejected. In 1920 it came up. Rejected. Reopened discussion in 1924, after the first World War was over. The military men had spoken in favor of it in the meantime. Marshal Foch had said that the existence of the tunnel might have prevented the war and if it had not prevented it it would have shortened it by two years. (The British favored a total of six million

(Four years)

### ADVERTISEMENT

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Thirty-one years ago in London, England, behind the highest mountains in the world, a young Englishman, named Edwin J. Hughes found the answer to this question. A great spirit opened his eyes. A great change came over him. He realized the strange power that knowledge gives.

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In his own case, he was brought back to splendid health. He acquired wealth too, as well as world-wide professional recognition. Thirty-one years ago he was sick as a man could be and low. Once his vision was brought, years of almost continuous tropical fevers, twelve hours, four blindness, paralysis and danger had made a human wreck of him, physically and mentally.

He was about to be sent back to England in the, when a strange message came—"They are waiting for you in Tibet!" He wants to tell the whole world what he learned there,

under the guidance of the greatest spirits he ever encountered during his 22 years in the Far East. He wants everyone to experience the greater health and the Power which these men gave to him.

Within ten years, he was able to retire to this country with a fortune. He had been honored by fellowships in the world's leading geographical societies, for his work as a geographer. And today, 22 years later, he is still an official, despite all its trials and, as years in experience, it is hard to believe he has lived so long.

In a few days in four previous issues the Power that Knowledge gives, MR. HUGHES wants to send to readers of this paper a 1,000-word booklet. He says the book is free for it to be released to the Western World, and offers to send it, free of cost or obligation, to anyone readers of this notice. For your free copy, address The Institute of World-Wisdom, 121 South Detroit Street, Dept. A-18, Los Angeles 1, Calif. Readers are urged to write promptly as only a limited number of the free books have been printed.

ness across the Channel during the first World War, the tunnel could have handled 4,000 men per hour with full safety precautions.) Churchill was in camp at St. Helier, offered to have the tunnel from scratch, spending on an armed village, with the power plant on British soil. Final outcome: rejection.

Then came World War II and at once there was a conference between the Allied leaders. How much would the tunnel cost? About 200 million dollars. What would it do? Shorten a five-hour trip to twenty minutes, shortening landing and unloading at both ends. How quickly could it be built? Two years. But our enemies knew the Germans were in Calais. And then everybody began to worry. That two-year estimate had still had many "peace" features, like a double tube for two-way traffic, etc., etc. Possibly modern machinery could drill through the "gray chalk" faster than supposed. In short, maybe the Germans were quickly building the tunnel, in an "unfinished" version, one tube only, through the final breakthrough to coincide with an air and sea assault.

—Well, we now know that the Germans did not try this, but that the tunnel was on their "after victory" agenda. But the British did build something like a model of the tunnel. When, in April, 1942, the plans for the Allied invasion of the European mainland were drawn up, Geoffrey Lloyd, in charge of dual, asked Lord Louis Mountbatten whether there was anything else his Ministry could do. Lord Louis did have something else in mind. He asked, "Can you lay an oil pipeline across the Channel?"

It was really a revival of Duna's idea. The military reasoning was that the Germans could attack tankers (which were not too plentiful) all along the way, while a pipeline was vulnerable

only at both ends. Furthermore, we did not have to pump the fuel into the tanker and then pump it out again. And bad weather would not hamper the flow through the pipeline.

Of course, there were technical difficulties by the yard. How did one make a flexible pipe of sufficient strength, a pipe which was flexible but did not let oil or gasoline seep out? After it had been made, how did one lay it across? A derrick had to be set up for making the pipe, something like a submarine cable without a core. Then enormous floating platforms (called *conductions* or "muzzers") had to be designed and built. The whole project was labeled FLUTO (Pipe Lines Under The Ocean) and it came off elegantly and on schedule. Four such pipelines were laid from the Isle of Wight to Cherbourg and sixteen more from Liverpool to Boulogne.

Of these twenty pipelines a dozen were of the corrosion-resistive type. The other eight were just three-inch steel pipes. An expert of the Iraq Petroleum Company happened to know that three-inch steel pipe could be wound on drums and would come off again with reasonable straightness, provided the drum had a diameter of more than ten yards. It is a matter of record that the Germans saw several *conductions* at work but did not molest them. They may have thought that the pipes were just submarine cables for communication.

And this is the completely unostentatious end of the story. Two hundred million dollars could still build the tunnel. Since it is certain to be profitable the money could be raised fast. The organizations for doing the work still exist. The military counter arguments have been disproved. More, western Europeans really tightening up into a unit of sorts.

Maybe somebody is making some moves behind tightly closed doors. But no visible signs exist.

\*There exists a line story about the Germans' tunnel plan being by "later" date, planned to start work in 1942.

LOOK FORWARD TO NEXT ISSUE'S NOVEL—

PASSPORT TO JUPITER by RAYMOND Z. GALLUN

## THE ETHER VIBRATES

(Continued from page 4)

movies and radio and TV programs whose service will inhibit only the growth of lifelessness. Certainly we intend to do all in our extremely limited power to burst it for good.

### OUR NEXT ISSUE

**REYMOND E. GALLUN** takes another long stride on his return to the science fiction peak (after too long an absence writing for other fields) with a grand novel of the not-too-distant future entitled **FASTER TO JUPITER**.

At that time life on Earth is, for most people, a sort of pleasant opium dream, with material needs taken care of in return for little effort. The *scenepych*, a sort of super-television in which the users go into an induced trance that makes the experiences of the performers seem their own, has become the most important element in human existence.

People dream the dreams of their choice, ranging only to eat, to battle, to insist in the social bickering of the too-long life. Love-making and the bearing of children have become secondary elements to the sensual satisfaction of the *scenepych*. There is nothing for anyone to worry about.

But Anson Ward, like other humans in increasing numbers, feels the demands around him, senses its wrongness but is unable to spur himself to action. Others, a group that calls itself the *Maltese*, share his feelings but are not so helpless. They feel that only through a return to violence can humanity progress and the result is revolt against Utopia.

This throws the *Maltese* into existence of Anson Ward into contact with the three Harwells, a daring family of adventurers whose interplanetary explorations, relayed via the *scenepych*, have long been Ward's favorite entertainment. Ultimately it takes Ward to Jupiter to find the Harwells, who have found beneath its thick and poisonous atmosphere the ultimate dead-end of any civilization based on the *scenepych*.

This is an intensely human story, told with a wealth of detail that brings it to vivid reality. It is a story of confused men and women, folk whose self-centered logic is called to task by inner urges they had thought long since left behind them. It is a story of interplanetary sweep, of corruption and naive idealism, of cowardice and

heroism, of people like you and countless ducking, fleeing and finally being forced to face issues they wish only to avoid.

It is, in short, a wonderful story—which should be among the highlights of a good 58 year.

From reality our next issue takes a quick dip into the realm of sheer fantasy with **THE ODYSSEY OF YOGGAR THRALL**, by Icelandic SS newsmonger G. H. Lidskoll, the horrendous tale of what can happen to a perfectly respectable grocer who has the misfortune to come in contact with—shudder!—human beings.

Unfortunately, while Yiggar has heretofore lived blissfully in the belief that human beings are mere fairy-story creatures, he becomes convinced of their reality the hard way. For the grocer he encounters when he pokes his way adventurously up through a Manhattan manhole cover, puts an involuntary crimp upon him.

Thereafter, whenever poor Yiggar tries to speak, a shower of old feces falls from his mouth—and you all know what cold from does to grocers. Until he can find his human and get the curse removed Yiggar is faced with extinction from microbial society or worse—for he represents a menace to his community.

Naturally, once he becomes aware of the implications of his plight there is only one thing to do—seek out the source of his harrid curse and get it removed. This, Yiggar must face despite the unnatural horrors of the underworld, to say nothing of the dangers of a second contact with a human. It is frightful.

It is also something close to a reader-riot—which is why you will find this very original novellet in the November issue, **THE ODYSSEY OF YOGGAR THRALL**, is something—we don't exactly know what but it contains more than its quota of howls and imprecations.

Edmond Hamilton will again be on hand with another Captain Future novellet, **MOON OF THE UNFORGOTTEN**, in the new shorter version of the famous Futureman series. This time Ears Gurney, Capt Newton's stalwart and grizzled friend is the focal figure in a story of a message to mankind which is at once novel and subtle and violently dangerous.

It stems from Europa, one of Jupiter's many moons, and it is the legacy of a long-ferreted galactic race. When Gurney be-



































# REVIEW OF THE CURRENT SCIENCE FICTION FAN FICATIONS



**C**HANGE, we have been recently and confidentially informed, is the norm of mundane existence. This being so, we have decided to make some changes here and now in this portfolio.

When we fell back to fanning reviewers some half dozen years ago, we discovered a column that devoted more interest to the number of pages included in each amateur publication than to said pages' contents. It was kindly, ineffectual and told just about nothing in a critical sense.

We made changes then—to some extent sought to separate sheep from goats in the matter of enlarged critical attention by creation of an A and B listing for countries received. Such listings were purely arbitrary upon our part, were intended to reflect our opinion, and were only.

### Source: Corporate Employees

However, recently, we have been in receipt of some very curious opinions from fanzine editors and publishers. Says one, who wishes to be anonymous, "My publication was reviewed by you in the July H-Liner. . . . After that I was afraid I would have to suspend publication for lack of subscribers as well as readers."

Says another, whose name is Walter A. Willis and who publishes BLANT from 170 Upper Northwards Road, Holshot, Upper Ireland, "Your review . . . gave us a shock and it will only be on my mind until I get this off my chest. The reason for our submission to the Chamber of Horrors can hardly be the format. . . . An over-sympathetic correspondent suggests it (your wrath) was because we made a few references to pen and your magazine which you resent-  
ed. . . ."

Well, enough is enough as always. The hits, as we said above, were arbitrary and intended to hurt us, the reviews merely a reflection of our personal opinion. But never have we been influenced in the slightest by any expressed opinion toward us.

own professional work—and never has it been our aim to get a dancing out-of-hand.

### Cream of the Crop

So—it would seem that changes are in order. We are herewith and hereby eliminating the A and B Listings. From now on we intend to select what we consider to be the ten most outstanding of the current crop, review them and list without critical comment all other fustian submitted. This should give you strategy editors and publishers a reasonably wide target to shoot at without fear of getting shot down yourselves if you fall short. So be it.

Here are our top ten selections from the amateur magazines at hand:

THE CHURCH, 251 Veterans Village, Canton, New York. Editor, Army and Air Corps, Published "Open-  
-mindedly," 11 Madison Street.

[illegible]

FANTASY ADVERTISER, 1445 Elsworth Road, Glendale 1, California. Editor RAS. Published bi-monthly. No pay ads. The pay means.

Byard wanted the top rung and politician's life in the city. He got only a makeshift job of doing, several times, and the late Harbormaster, still a pauper and confirmed drunkard, called at Byard's and asked, "brother, how much do you want of John Carter and his water the good people of the city?"

**HAMMATT, FRANK, MD 91** Third Avenue, Flushing, New York. Editor, *Journal*. *Journal*, Published twice monthly, the new cover 12 issues \$1.00.

[illegible]

THE MERCHANTS' UNION, 1088 Spruce Avenue, Canton City 1, Mineral. Editor, Mandy Bealster. Published. Circulation, 25,000 copies.

At least 100,000 people and 100,000 head of livestock were killed in the central and eastern parts of China, according to the Chinese government. The Chinese government also reported that 100,000 people were killed in the central and eastern parts of China.







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## MAKE MONEY with Bostonian SHIRTS

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is not a "story" at all in the conventional platitudinous sense of the word. It is something far more so, in its beautifully rendered interlocking series of incidents and events, each in itself minor, it creates an almost too-vivid picture for the reader of what life in the very near future may become for those who survive.

Miss Merril, whose recent pocket-sized science fiction anthology, **SHOT IN THE DARK**, was reviewed in these columns earlier this year, has come up with an extremely interesting first novel. It is not, perhaps, science fiction in the manner of the stories of Dr. E. E. Smith and others. But it is fiction, praise Allah, and it is certainly the result of a concept of science that is at present all too much a part of our lives.

Furthermore, it is an excellent work by one of the most talented and intelligent personalities in the science fiction field. We hope it is the first of many from the same typewriter.

**THE BRIDGE OF LIGHT** by A. Hyatt Verrill, Fantasy Press, Reading, Pa. [3200]

This is space opera without space—in short, super-adventure by one of the masters of the genre. For A. Hyatt Verrill, on the threshold of his sixth decade, has, in the nearly sixty years since his graduation from Yale, adventured all over the place with special interest reserved for Central America and the Spanish Caribbean. Currently in the seashell business at Lake Worth, Florida, he can look back on treasure recovered from Spanish galleons, upon being the only white man in four centuries to view the lost Tlingit gold man in Costa Rica, upon being an honorary cannibal chief.

Mr. Verrill has driven heavily upon this







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